Volume 2 Number 4 September 1989 £2.95

A Database Publication





Domark has a ficence to thrill





- A MEGABYTE OF SUPER SOFTWARE
- Protext: The best Amiga wordprocessor.
- Zowee: A programmer's secrets unveiled.
- Home Accounts: Are you
- living beyond your means?
- Day by Day: You need never forget a Birthday.
- MouseZoom: Turbo-charge your desktop rodent.

To load: Switch on and insert disc

Full instructions are in the September issue of Amiga Computing



**BUSINESS BONANZA!** 

**Working versions** of 3 top packages

These - and more - are squeezed on to one disc





**DIGITA** 

Protext

# HE AMAZING AMIGA



A500 CPU, Mouse, P.S.U., T.V. Modulator, Very First Tutorial, Workbench 1.3, Basic, Extras and

# PLUS POSTRONIX BONUS PACK

WORTH OVER £250 which includes 10 Blank Disks, Disk Storage Box, 10 Excellent Games, Mouse Mat, Mouse Bracket (Mouse Holder) Deluxe Paint.

+ £5.00 post and packing

# AMIGA 500 PLUS DISK DRIVE

Instruction Manuals, Extra Disk, Workbench 1.3, The Very First Tutorial, T.V. Modulator, Photon Paint, Mouse PLUS additional Amiga Compatible Disk Drive and 10 Blank Disks.

+ £5.00 post and packing.

AMIGA 500 + 1084S **COLOUR MON** 

(including the Amiga 500 deal) £049.

+ £10.00 post and packing



**MPS 1200P** 

The Commodore MPS1200P printer presents the state of the art in dox matrix printers, with all the features of a printer that would cost much more. The MPS1200P is designed to be like three printers in one. It can act just like an Epson FX printer, or with the flip of a switch, it can act just like an IBM Graphics Printer with IBM Group II-I character set (Danish/Norwegian character set) support. It can also print all the characters available with the Amiga in the Amiga configuration. The MPS1200P is capable of all the printing functions you would expect, as well as some additional features you may not expect.

# MPS 1500C COLOUR PRINTER

A. TECHNICAL CHARACTERISTICS PRINTING TECHNIQUE ......Impact dot matrix (9-needle print head).

DRAFT MODE ...... — matrix: 9 vertical dots x (5 + 4) horizontal dots; — print speed: 120 char/s, at 10/char in

TABULATION SPEED .....2 char/s

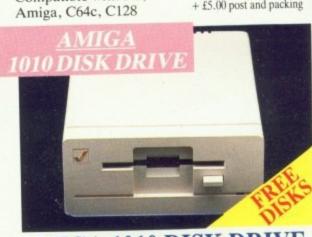
PRINTING DIRECTION .....bi-directional, with optimised head movement

CHARACTER SET ......ASCII characters and special characters.

MAK. PRINT LINE LENGTH .......40 top 192 characters, according to print pitch selected.

+ £5.00 post and packing

+ £5.00 post and packing



Amiga 3.5" external drive. Capacity 880K PLUS FREE DISK STORAGE BOX & 10 BLANK DISKS

+ £5.00 post and packing

+ £5.00 post and packing

# **A501 RAM**

Compatible with PC,

512K for the Amiga

+ £5.00 post and packing

ONL

whole n mputer rable cle your co ly safe f rms of a

> RGESTO L MAJOR

# DMORE BES



### THIS TOPICAL GAMES COMPENDIUM OFFERS A TRUE SPORTING CHALLENGE

Pack contains: C64c Computer 1530
Datasette, Quickshot Joystick, Matchpoint
(Tennis), Snooker, World Championship
Boxing, Daley Thompsons Supertest,
Hypersports, Basketball, Matchday II,
Daley Thompsons Decathlon, Basket
Master, Track and Field.

PLUS POSTRONIX BONUS PACK OF £100 OF FREE SOFTWARE

£149.99

+ £5.00 post and packing



### 1541 II DISK DRIVE PACK

1541 II Disk Drive, 10 Excellent Disk Games, 20 Blank Disks, 51/4" Diskette Storage Box. AND GEOS!

£169.99

+£5.00 post and packing



# CONTROLLER

### **ICONTROLLER**

Icontroller is semi permanently mounted on your computer console. Icontroller leaves hands on the keyboard while executing Icon commands with your fingertips.

£15.99



# STARFIGHTER

Compatible with Sinclair Spectrum, Commodore. Atari Computers. Atari 2600 Video Games Systems.

£14.95



### CHALLENGER DELUXE

Compatible with Spectrum (with optional interface). Commodore. Atari 2600 Video System. Atari Computers. Amstrad computers.



### CHEETAH 125+

Compatible with Spectrum Commodore. Atari 2600 Video System. Atari. Amstrad PC.

A) 1750 RAM EXPANSION MODULE FOR CBM 128

Simply plug it into the expansion port on your CBM 128 and 512K Bytes of additional Ram are available.

C) 1764 RAM EXPANSION MODULE FOR COMMODORE 64

£8.95

B) 1351 COMMODORE MOUSE

dre 1351 Mouse is co



### TAC 5 CONTROLLER **JOYSTICK**

Compatible with Atari. Commodore.

£13.99



# + £5.00 post and packing THE HOLLYWOOD

PACK

PLUS A COMPENDIUM OF T.V. GAME SHOWS

Pack includes: C64c 1530 Data Cassette, Quickshot II Joystick, The Great Escape, Miami Vice, Platoon, Rambo, Top Gun, Every Second Counts, Blockbusters, Bullseye, Trivial Pursuit, Krypton Factor.

Plus: POSTRONIX BONUS PACK OF £100 OF FREE SOFTWARE

fler designed for use wth the CBM 64/128.

All prices + £5.00 post and packing.

A GREAT DOUBLE THEME PACK

OFFERING THE BEST OF HOLLYWOOD,

ONLY £149.99

+ £5.00 post and packing



THE FAMILY

FREE SOFTWARE

ONLY £199.99

# SEIKOSHA

### SEIKOSHA PRINTER

Compatible with most makes of Commodore computers. Features. variety of fonts including

graphics and near letter quality, reverse printing, italics, tractor feed and paper seperator. Comes complete with serial £159.00



AN EXCELLENT PACK PROVIDING

Pack includes: C64c Computer 1530 Data Cassette, Quickshot II Joystick, Personal Hi-Fi, Commodore Juke Box Audio Tape (10 Hits), Yamaha SHS10 FM Digital Keyboard with Midi, Ghostbuster, Rollaround, Tau Ceti, Agent X11, Surprise Game.

Plus: POSTRONIX BONUS PACK OF £100 OF

C= COMMODORE GAG

HOURS OF ENTERTAINMENT FOR ALL



### SLIK STIK JOYSTICK CONTROLLER

Compatible with Atari Computers. Atari Games System. Commodore.



# COMPETITION PRO 5000

Compatible with Commodore 64 and Vic 20. Sinclair ZX Spectrum (interface required).

£14.95



# TAC 2 CONTROLLER **JOYSTICK**

Compatible with Commodore 64 and Vic 20. Atari Computers. Atari Game Systems.



### RAM DELTA DELUXE MICROSWITCH JOYSTICK

Compatible with Atari computers and Video Games Machines. Amstrad PCW (with adaptor). Spectrum (with adaptor).

Commodore.



### MICRO HANDLER MULTI **FUNCTION JOYSTICK**

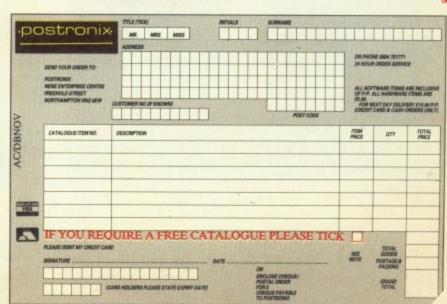
Compatible with Commercial C16/+4 (adaptor required) £24.95



A whole new range of innovative computer covers, made from durable clear plastic. Designed to fit your computer perfectly ... not only safe from dust but also all forms of accidental damage.

£6.99 C64 OLD STYLE £7.99 **C64C NEW STYLE** £9.99 AMIGA 500 £9.99 ATARI 520ST ATARI 1040ST

LARGE STOCKS OF SOFTWARE & ACCESSORIES FOR ALL 16 BIT, 8 BIT COMPUTERS – ALSO ALL MAJOR GAME CONSOLES – PHONE (0604) 791771 NOW WITH YOUR REQUIREMENTS.



OFFER APPLIES TO U.K. ONLY. OVERSEAS ORDERS CHARGED AT OVERSEAS RATE.

Managing Editor Derek Meakin

Editor Simon Rockman

Assistant Editor Jeff Walker

Production Editor Peter Glover

> Art Editors Mark Nolan Doug Steele

News Editor Don Lewis

Advertisement Manager John Snowden

> Advertising Sales Wendy Colburn

Editorial: Administration: Advertising: Subscriptions: Telecom Gold:

Telecom Gold:
Telex:
Fax:
Prestel Mailbox:

614568383

Published by: Database Publications Ltd, Europa House, Adlington Park, Adlington, Macclesfield SK10 4NP.

ISSN 0952-5948

Amiga Computing welcomes articles for publication. Material should be typed or computerprinted, and preferably double-spaced. Program listings should be accompanied by disc. Please enclose a stamped, self-addressed envelope, otherwise the return of material cannot be guaranteed. Contributions can only be accepted for publication by Database Publications Ltd on an all-rights basis.

© 1989 Detabase Publications Ltd. No material may be reproduced in whole or in part without written permission. While every care is taken, the publishers cannot be held legally responsible for any errors in articles, listings or advertisements.

Amiga Computing is an independent publication and Commodore Business Machines (U.K.) Ltd is not responsible for any of the articles in this issue or for any of the opinions expressed.

News trade distribution: Europress Sales and Distribution Limited, Unit 1, Burgess Road, Ivyhouse Lane, Hastings, East Sussex TN35 4NR. Tel: 0424 430422.

# AMIGA SCENE

7 LATEST NEWS

Commodore regroups for a marketing attack. TeX discovers graphics. The Amiga goes back to school. Clip art for DTP and Superback save discs.

# AMIGA ARCADE

12 THE VERY LATEST GAMES NEWS

Is there life on Mars? Gemini Wing poses double trouble. Virgin signs Monty Python. Imageworks enters the machine and EA adds to Populous.



# RELIGION

36 HEAD TO

Listen in as Jez "Starglider" San and Dave "Beebulator" Parkinson argue about the "right" way to program and the merits of trashing AmigaDos.

# MACHINE CODE

38 COPPERLISTS EXPLAINED

Jolyon Ralph teaches you some of the secrets used by demo programmers to do things only the Amiga makes possible. This month: The Copper.

# BASIC TUTOR

44 GOOD ENOUGH TO EAT

John Kennedy looks to see what is on the menu and finds that it is whatever you want it to be with some clever code and the right data format.

# COVER DISC

47 CRAMMED INTO A MEGABYTE

Protext from Arnor: The best Amiga word processor complete with save and print. Home Accounts to balance your books and Day by Day to help you keep appointments. Plus the Zowee demo with source. Plus Mouse Zoom, an essential Workbench utility.



### VIDEO

54 I CAME, I SAW

The fastest video frame grabber also serves as a genlock, putting it at the top of every video buff's wish list. But at £600 it needs to be good.

# AMIGADOS

59 UNDER THE WORKBENCH

Henning Sorensen explains what a device is, why you need a MountList and why a pipe makes AmigaDos a very special operating system.

# SOUNDZ

74 MAGICAL MUSICAL

Dean Friedman, chart-topping rock musician, is an expert on using the Amiga to make super sounds. He checks out the best software.

# EXPANSION

78 POWER'S 100 MEG HARD DISC

Adding a Quantum to your life can make a very big difference. Simon Rockman looks at the best hard drive available for the Amiga.



The fastest drive in town Page 78

### COVER STORY

64 TAKING A BYTE OUT OF AMAX

Rupert Goodwins knows about Macs but loves his A500. Thanks to Readysoft he can now have the best of both computing worlds. Or can he?

# HINTS

85 GAME KILLER

More magical mayhem from the happiest game hacker with tips on Populous, Lords of the Rising Sun and Forgotten Worlds.

# HARDWARE

70 PRETTIEST PRINTER

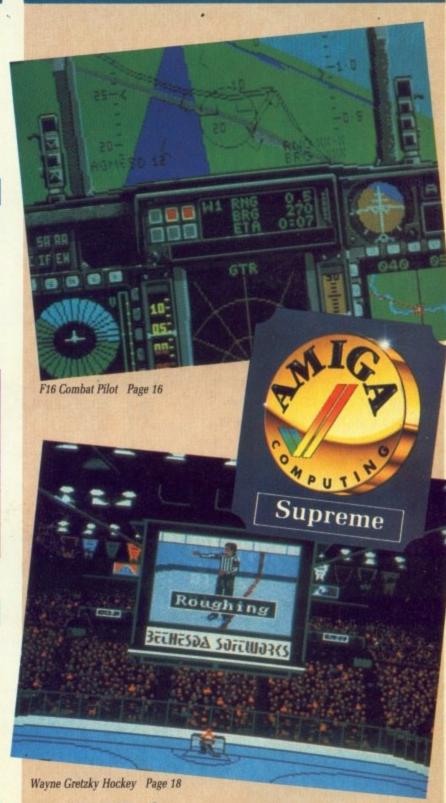
The Epson LQ-860 is the strong silent type. With a 24 pin face it is also very good looking. Introduce it to your computer for colourful results.

# LETTERS

89 YOUR RIGHT TO WRITE

Spotting the .info bug, sorting out Citizen's colour quandry, what to buy on a trip to the US and the tell tale sign of a dead Amiga.

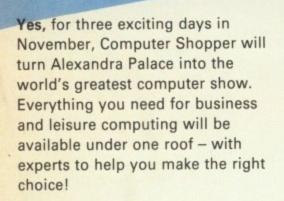
# GAMES REVIEWS



Plus

- F-16 Combat Pilot scores a hit
- Wayne Gretzky is the coolest
- FOFT takes space trading further
- Beat Prost in Grand Prix Circuit
- Honda RVF: Trackside triumph
- Is Skweek a Communist plot?
- Get lost with African Raiders
- Two-player turmoil with Xybots
- Need you be scared of Phobia?
- Savage sounds the angry part.
- Mining rocks in Millenium 2.2
- SDI: A coin-op for Reagan's era
- Time Scanner flips for 1 meg

Visit The Greatest Christmas Computer show on Earth!



The Computer Shopper Show is your chance to meet the dealers with the bargains, the manufacturers with the latest machines – and to take away the things you buy on the day!

Auctions, demonstrations, competitions . . . everything that you've ever wanted from an exhibition will be happening at the Computer Shopper Show – the only show for the direct buyer and the ultimate computer shopping experience!

And, with Computer Shopper you know you'll save money!

Why not start right here! By ordering your tickets in advance you will save fffs! Simply complete and return the coupon with your payment or telephone the Credit Card Hotline on 051-357 2961 to place your order.

### Prestel or Microlink

To place your order by Prestel, Key +89, then 614568383. Microlink users should key MAG 001. Please quote your credit card number and your full name and address when you place your order.

# SAVE £££s WHEN YOU BUY YOUR TICKETS IN ADVANCE! Yes! Please send me my tickets for the Computer Shopper Show!

£
Adult tickets at £3 (Save £1!)
Under 16s tickets at £2 (Save £1!)
Family tickets - admits up to 2 adults
and 2 children - £9 (Save £5!) TOTAL
I would like to pay by -
☐ Cheque made payable to Database Exhibitions Ltd
☐ Credit card ☐ Access ☐ Visa Expiry Date
No
Signed
Name
Address
Postcode
Please return your completed order form to -
The Computer Shopper Show Ticket Office, Database Exhibitions Ltd,
PO Box 2, Ellesmere Port, South Wirral L65 3EA. A7

TELEPHONE HOTLINE
Place your orders for tickets by calling
0 5 1 - 3 5 7 2 9 6 1

The Computer Shopper Show

Alexandra Palace, London

10am-6pm Friday, November 24 10am-6pm Saturday, November 25 10am-4pm Sunday, November 26

- over 250 stands serving every major make and model the ultimate computer hypermarket, packed with pre-Christmas bargains and offers.
- \* Incorporates the Amstrad
  - Computer Show, the Atari Computer Show, the Electron & BBC Micro Show and much, much more!
- ★ On-site car parking for hundreds of cars – ideal for taking away your computer bargains on the day!
- ★ Excellent public transport network with courtesy coach link to the local British Rail station.
- ★ Special show features and entertainment to make your shopping experience fun!
- ★ Special discount tickets for under 16s and family groups.

Sponsored by



Organised by

DATABASE



# AMIGA SCENE

# Commodore marketing being restructured

COMMODORE has appointed a trio of top-flight marketeers in a bid to reclaim the company's UK number one spot. The new people are Jeff Earl, formerly with Toshiba, Jenifer Perry, who came from Amstrad US and Jeff Clifford a high tech consultant. The increase in marketing strength is helped by the promotion of several people within Commodore.

The push will be on all fronts with both the PC and Amiga split into home and business markets. Commodore is already the second biggest PC company in Europe and the aim is to reflect this success in the UK.

The Amiga developer support programme is also

being strengthened by setting up a Europe-wide electronic mail system. Each country will have a local telephone number. The messages will be collected and sent through Commodore's internal electronic mail to Commodore Amiga Technical Support (CATS) in the US.

To bolster the UK side of Commodore's support the company is looking for people with PC, Amiga or Unix expertise. If you are interested in working for Commodore and being among the first people to get your hands on future products contact Dr Rahman Haleem at Commodore UK on 0628 770088.

A MIGA owners who crave the satisfaction of putting their own fantasies into a workable game will welcome the latest offering from Microdeal (0726 68020).

Following its success on the Atari ST, interactive program generator Talespin has now been adapted for the Amiga

Talespin allows picture files created with most proprietory painting packages to be used time and time again in an interactive environment. A character can be created and then appear in a number of different guises.

The artwork scenarios can be linked with text boxes and digitised sound supplied by Microdeal's own Amas digitiser. The result is interactive role play which can be

# Fantasies into fact

used in both games or educational environments.

"We think our main sales will be from people who want to write their own adventures", said Microdeal's John Symes. "Talespin can also be adapted for creating educational software, instruction material and in demonstration work".

Apart from the inclusion of text, Talespin is mouse orientated and included in the package is a disc to allow created programs to be passed on under public domain.

The program needs 1Mb of memory and will import artwork from most painting packages. It costs £29.95.

THERE are plans to develop a Concept keyboard for the Amiga. Discussions have been taking place between Commodore and Star Microterminals (0962 843322) and it has been established that a Concept keyboard is a workable idea for the Amiga.

# Concept for the Amiga?

Plans now await development of the necessary Amiga software to run such a keyboard, said Trevor Nice, educational manager for Star.



THE review of AmigaTeX in the November 1988 issue of Amiga Computing generated a lot of interest in the product, so much so that Radical Eye Software has now appointed a UK distributor for it's products. All orders and support are now being handled by The Text Formatting Company (01 806 1944).

A new version of AmigaTeX is imminent. Apart from a few minor bug fixes and a completely rewritten manual, the major change of this release is the ability to include IFF graphics within a document.

The amount of control AmigaTeX gives over how the images will be printed is astonishing. If you thought Workbench 1.3 offered nice graphics support "you ain't

# Graphics for AmigaTeX

seen nothing yet!.

Not only is it possible to select the method used for dithering, but you can also adjust the degree of dither as well as many other parameters. All graphics functions can be previewed on screen before printing.

This release means that AmigaTeX now gives not only the best text output available from the Amiga, but also some of the best graphics output as well.

The good news for existing AmigaTeX owners is that update prices in the USA are a mere \$10 for the program and \$10 for the manual. Expect UK prices to be comparable.

FILING your own tax return is cheaper than taking professional advice, but few people have the knowledge to be sure they are claiming all their due allowances.

Digita International (0395 270273) claims to have the answer to this problem with a new Amiga version of its Personal Tax Planner program.

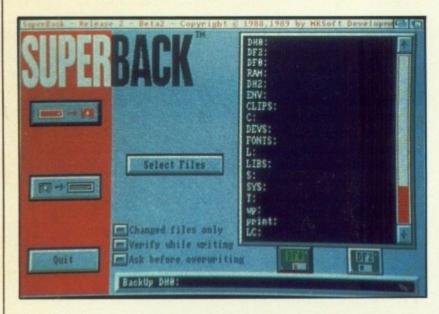
Tax Planner has already been good news for at least one Digita customer. Having checked his tax affairs with an earlier version of the program, Mr D.S. Staples of Berkshire wrote to the company on June 24 this year thanking them for helping him obtain a rebate of £1,111. On July 8, he wrote

# Taking on the taxman

again to tell Digita he had received a further rebate of £689. "What can I say but well done", said Mr Staples.

Tax Planner is a fully menu-driven program based on UK income tax. It asks users a series of questions similar to those on a tax return form. Once details are typed in, it computes the tax which should be due. There is also a "what if" facility which will calculate the tax liability for changed income and circumstances or changed alowances.

Personal Tax Planner costs £39.95.



ONE of the major limitations of the original SuperBack was that it could only use df0: as the backup device. SuperBack II can now make use of as many floppy drives as you have attached to your Amiga.

This is important firstly because it makes the backup process even quicker, and secondly it is still possible to perform backups even if your internal drive is not functioning.

Other improvements with SuperBack II are the ability to specify the amount of memory used for buffering

# SuperBack drives ahead

so that more memory gives a faster backup but hampers multi-tasking, more security in the way the backups are stored – there is now no chance of getting two sets of backup discs muddled – Scandinavian language support, plus various other niceties.

It would appear that this new version is purely a functional improvement – there were no bugs to be fixed in the previous version.

THE former vice-president of the Xerox Corporation, Brian C. Weyman, has been appointed vice-president of worldwide manufacturing and purchasing – a new position in the corporate structure of Commodore International.

Mr Weyman (46) joins Commodore after 28 years with Xerox.

"The recruitment of a senior manufacturing execu-

# Xerox to Commodore

tive with Mr Weyman's experience is an important element in our overall plan to gain efficiencies in purchasing, production and distribution", said Irving Gould, chairman and chief executive officer of Commodore International.

FOLLOWING last month's decision to switch the MicroLink electronic mail service from Telecom Gold to Istel, it has been revealed that the 10,000 subscribers will soon have access to the widest range of electronic mail services in Britain.

New plans include easy access to more than 1,000 global databases, international teleconferencing and teleshopping. They also offer Istel's higher speed 2400 baud rate with MNP

# MicroLink expands

error correction as well as X-Modem, Y-Modem and kermit.

Subscribers will continue to be able to communicate with Telecom Gold and other international Dialcom systems and MicroLink chairman Derek Meakin has promised that the service will continue to undercut Telecom Gold prices.

VIDEON, a video digitiser for the Amiga has been launched by Power Computing (0234 273000). Simplicity of use is one of the main attributes of this direct digitiser which accepts images from any primary power source – TV, video recorder or video camera.

Videon uses full colour but is not a frame grabber. A still image is needed but with good algorithms, the end results are exceptionally good. Pictures can be digitised in all Amiga formats and in all resolutions.

In addition to the hardware, Videon includes digitising software plus

# Simpler digitising

extensive routines for special effects such as pixelisation, line art, multi-picture effects, solarisation, image zooming and dramatic 3D sweeps for wrapping images round solid objects. Videon costs £249 and can be teamed with Video Magic, Power's software for video presentations.

Power has also launched its new multi-drive, a 5.25 and 3.5in drive for the Amiga with twin track counter costing £249 and a new 48Mb hard disc for the Amiga at £499.

CONTINUING its push into the education market, Commodore (0628 770088) has launched its Education Dealer Initiative '89 aimed at recruiting new dealers and restructuring the present force.

Called EDI 89, the new moves have split Commodore's education dealerships into three bands.

Entry level are the registered dealers who will get regular mailings and support evenings with distributors.

Next up are the authorised dealers who will receive these benefits plus sales leads from distributors and visits from Commodore staff for major demonstrations and direct involvement in promotions to the education market.

Top of the pack are the principal dealers who receive the benefits given to other bands plus sales leads passed direct from Commodore, involvement in local education authority presentations and invitations to shows.

Tenders will be passed on to principal dealers and they will be able to compete with the Stationery Office on pricing of Commodore computers.

To qualify, registered dealers just have to return a registration form and authorised dealers must have demonstration and technical

# New deal for dealers

support facilities, stock holding areas and an education market turnover of £5,000 a month on Commodore products.

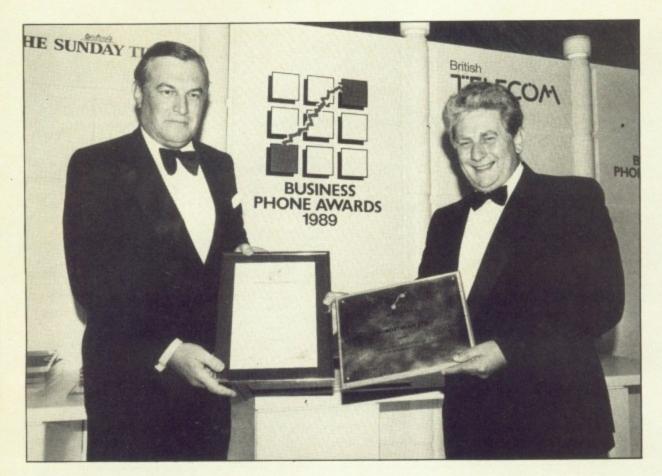
The principal education dealers must have all the attributes of authorised dealers but with sales of £20,000 a month.

Distributors will also be able to gain official authorisation if they show a sufficient knowledge of the market and are prepared to run promotions aimed at education.

"We now have a big enough presence in the education market to justify expanding our dealer base", said Commodore's distribution sales manager for the education division, Anton Bray.

"We shall be pumping a lot of marketing effort behind the dealers who come on board during Education Dealer Initiative '89. Commodore's ball is rolling, all we've got to do now is maximise that momentum".

CBM's managing director Steve Franklin said: "There has never been a better time for dealers to get involved with Commodore. The incentives are there for the right dealers – and there is more to come".



WORDSTREAM, the electronic mail typesetting service offered on MicroLink, has won a major national ward for its creative and effective use of telecommunications.

The Dorset based company won the £500,000 to £1 million turnover award in the 1989 Business Phone Awards jointly sponsored by the Sunday Times and British Telecom.

Wordstream is the brainchild of David Furlonger. He supplies customers with communications software and a manual setting out the simple codes which are needed. They write and mark up the copy with type

Share a

monitor

# Email service wins award

sizes, headlines and any other necessary instructions and send it via their own desktop computers into an electronic mailbox.

The mailboxes are automatically emptied at high speed, the copy is processed at Wordstream's offices in Poole and the reprobromides are ready within two hours. They are then sent by post or courier back to the customer.

"We have a very wide range of customers from publishers of foreign phrase books to political pressure groups to sexy magazines", said David Furlonger. "Recently, I discovered we were setting the labels for HP sauce bottles all round the world".

Since it was set up three years-ago, Wordstream has built up a strong base of 3,000 regular customers and a turnover of £600,000 a

Collecting his award in a ceremony at The Savoy in London, David Furlonger said: "Email adds the vital element of reliability to the transfer of informaton from user to processor. It has created the vehicle for Wordstream's success".

# Time called for pirates

A SWINTON licensee took swift action when FAST, the Federation Against Software Theft, stepped in to tell him an illegal software copying den was being run in the back room of his pub. John Heaton of The Beehive Hotel, Swinton, evicted the pirates from his premises and vowed they would never return.

FAST was tipped off about the piracy meetings by a software dealer whose staff had discovered what was going

Members of Bolton and Swinton computer clubs were believed to be involved, but officials of the clubs have stressed that the undercover activities were entirely unofficial and in no way condoned by them.

"It was so blatant", said a spokesman for FAST. "They apparently moved into the pub, set up their machines and started copying. We are sure that copying has now ceased in the pub concerned, but you can never be certain that it has not moved somewhere else".

# Now Amiga's on the ball

SHORTLY after becoming a Commodore dealer, Ladbroke Computing (0772 21474) is making its mark on the Amiga world. It has already developed its own range of Amiga expansion boards and has come up with what is thought to be the first trackball for the Amiga.

The boards, which slide under the Amiga come fitted with a switch which will knock out 0.5Mb of ram to accomodate software which does not need the full 1Mb.

A baseboard costs £17, the board with battery-backed clock £24.99, the board with ram installed £107.99 and a fully populated board with clock is £119.99.

The trackball specially designed by Ladbroke for the Amiga is now on sale at a price of £24.99.

# Commodore bonanza

THE Amiga and the Atari ST may be competitors but one British company has the best of both worlds. Trilogic (0274 691115) often receives requests for leads to enable two computers to share one monitor. The most popular combination is the Amiga and the ST.

Its new monitor sharer enables any two computers which have TV or monitor leads ending in a Scart plug to share one TV or monitor. COMMODORE UK has now thrown its support behind the Computer Shopper Show.

The growing list of exhibitors includes many household names in the Commodore market including Silica Shop, HiSoft, Equinox, Evesham, Megaland, Micro Anvika, Postronix, Trilogic and Tynesoft.

Up to 40,000 visitors

are expected to turn up at The Great Hall, Alexandra Palace from November 24 to 26.

"The choice of Commodore products will never have been greater nor will the number of special show offers", said Michael Meakin, head of organisers Database Exhibitions. "It will be a bonanza for Commodore owners".



NLY £79.99 PLEASE STATE A500/1000/2000

A top quality stereo sampling system at a realistic price.

100% machine code software for realtime functions.

HiRes sample editing.

Realtime frequency display.

Realtime level meters.

Files saved in IFF format.

Adjustable manual/automatic record trig level.

Variable sample rate & playback speed.

Separate scroll line waveform windows & zoom function with Edit windows for fine accurate editing.

3D shot of sound waveform. Wave editor to design your own waveforms or adjust existing ones.

Microphone & line input 1/4" Jack & Din connections.

DATA

Software files can be used within other music utilities.

TO COMPLEMENT THE SAMPLE STUDIO THE

DATEL JAMMER GIVES YOU A 5 OCTAVE

KEYBOARD TO PLAY & RECORD YOUR SAMPLED SOUNDS

# **FEATURES:-**

4 track sequencer up to 9999 events.

Tempo & Beat controls.

Mixer Controls on Instruments.

Load & Save sequence.

Works on standard IFF file sounds.



MIDIMASTER



Full Midi Interface for A500/1000/

2000 (please state model). Compatible with most leading Midi packages (including D/Music). Midi In - Midi Out x3 - Midi Thru.

Fully Opto isolated.

ACQUISITION UNIT



ONLY £99.99

PLEASE STATE A500/1000/2000

Turn your Amiga into a sophisticated measuring instrument capable of measuring a wide range

of data inputs. Sample & display events from microseconds to hours- with amplitudes from milivolts to 50 volts.

A Hardware/Software package with very high spec. including:-DIGITAL SCOPE DISPLAY - 2 channel inputs.Manual or continuos display. Timebase 500ms/div to 20us/divaccurate to 5%.

6 bit flash conversion gives 2 million samples/sec.
PLOTTER DISPLAY

Timebase range 1 sec to 10hrs per

All features found on units costing thousands of pounds.

25 pin 'D' to 36 way Centronics parallel lead. 1.2m length.

▼ A500 or 1000, please state.

ONLY £8.99

PRINTER LEADS

SAVE OVER

VIDEO

DIGITISER

256 x 256 display with 16 grey

Realtime frame grab 1/50th second.

Takes standard composite Video input from camera or Video recorder.

Screen update 1 frame per second, single, continuous or buffered

display.

Load, Save facilities including IFF

Edit picture, cut, copy, paste and undo

Special effects, reverse, negative,

mirror, compress, etc.
Increase the width of the display
to 320 x 256 automatically or

manually.
Plugs into the parallel port of your
Amiga 1000/500/2000.
Comes complete with its own

power pack.

**ONLY £89.99** 

Very simple to use.

### MIDIMASTER INTERFACE

This unit connects your computer

to any MIDI instrument.
Fully Opto isolated - MIDI IN, MIDI OUT, MIDI THRU.

Just plug in and go.

### FREE CABLES

3 metre long MIDI Cables -completely FREE!! (normally £6.99).

FOR ONLY NO MORE TO BUY!!

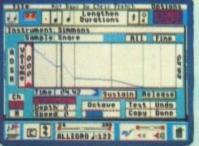
# **OTAL MIDI MUSIC** PACKAGE

UNBEATABLE VALUE PACK - THE YAMAHA SHS 10 FM MIDI COMPATIBLE GUITAR-STYLE SYNTHESISER, THE ACTIVISION **MUSIC STUDIO SOFTWARE PLUS THE MIDIMASTER INTERFACE** TO CONNECT TO YOUR COMPUTER SYSTEM

Lengthen 1 0 Instrument Simmons Sample Snare

> FREE MIDI CABLES

\* R.R.P. over £175



YAMAHA SHS 10 FM YNTHESISER KEYBOARD

Superbly styled guitar-type keyboard with shoulder strap. Top quality brandname

2.5 octave keyboard.

25 built-in instrument and rhythm choices.

Uses FM synthesis.

Full MIDI standard.

### **ACTIVISION** MUSIC STUDIO

A full feature MIDI Recording Studio.

Studio.

A multi channel sequencer with realtime input and full editing facilities.

Completely menu driven - full

Mouse control.



# EXTERNAL 3.5" DISK DRIVE

- Slimline extra low profile unit only 6" long!
- Top quality fully compatible drive mechanism.
- Throughport allows daisy-chaining other drives.
- A superbly styled case finished in
- 1 meg unformatted capacity.
- Good length cable for positioning

# **NEW LOW** PRICE ONLY

SINGLE DRIVE

# on your desk etc. ONLY £129.99 TWIN DRIVE ADD £5 FOR COURIER DELIVERY IF REQUIRED

- Switch in/out of external drives.
- ve on memory allocated for drives not currently in use.
- EXTERNAL DRIVE SWITCH DF1 & DF2 controlled.
  - Fits between computer & driver(s).

ONLY £9.99



### STEREO BOOSTER SYSTEM

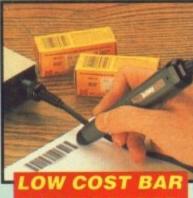
- Boost the output of your Amiga in
- glorious stereo. 30W + 30W power amplifier.
- 5 band graphic equalizer.
- Complete with cables for A500/A1000/A2000 models.
- Slimline colour matched metal case with built-in mains power
- Headphone socket.

# NLY£59.99



# MATCHING SPEAKERS

- High quality miniature 3 way speaker units in die-cast aluminium shelf enclosures. 30 Watts 8 ohm each.
- ONLY £39.99 PAIR



# ODE READER

- Model 420, high performance, low cost Bar Code Reader.
- Works with any Amiga/ST computer system (please state which) via the RS232 interface.
- Features a built-in self-testing function.
- Can read codes EAN, UPC, Inter leaved 2 of 5, Code 39, CODABAR.
- Comes complete with wand, ready
- Features a diagnostic indicator. ONLY £189.99



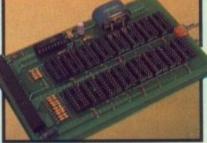
# REPLACEMENT MOUSE

- High quality direct replacement for mouse on the Amiga.
- Teflon glides for smoother movement.
- Rubber coated ball for minimum slip.
- Optical system counting 500/mm.

ecial offer - free mouse mat + mouse house (worth £7.99).

### **ONLY £29.99** COMPLETE

# 512K RAM EXTENSION CARD



- Available with/without calendar/
- Simply plugs internally into A500
- Switch in/out with switch supplied.
- Fitted in minutes no soldering etc.
- Accepts 41256 DRams (zero K
- With calendar/clock onboard time/ date automatically booted.
- Battery backed to retain time/date.

### FOR STANDARD CARD TO ACCEPT 512K

# FOR VERSION WITH CLOCK/ CALENDAR

NB THESE PRICES ARE FOR BOARDS WITHOUT RAM CHIPS. PHONE 0782 744707 FOR RAM PRICES. PHONE FOR LATEST FULLY POPULATED BOARD/RAM PRICES

# GENISCAN GS4500 AMIGA



- An easy to handle Handy Scanner featuring 105 mm scanning width & 400 dpi resolution enables you to reproduce graphics & text on your computer screen.
- Adjustable switches for brightness & contrast
- A powerful partner for Desk Top Publishing. With Geniscan you have the ability
- to easily scan images, text & graphics into the AMIGA.
- Printout for Epson compatibles.
- Powerful software allows for cut 8 paste editing of images etc.
- Save images in suitable format for most leading packages including DELUXE PAINT etc.
- Package includes GS4500 scanner, Interface & Scan Edit software.
- Unmatched range of edit/capture facilities simply not offered by other scanners at this unbeatable price.

# SPECIAL OFFER

**COMPLETE WITH DELUXE PAINT II &** DELUXE PRINT FOR ONLY £189.99

INCLUDING HARDWARE/SOFTWARE



# O ORDE

BY PHONE 7

82 744707 24hr Credit Card Line

BY POST

Send cheques/POs made payable to "Datel Electronics"

0782 744292

UK ORDERS POST FREE

EUROPE ADD £1 OVERSEAS ADD £3

PRICES AND SPECIFICATIONS CORRECT AT TIME OF PRESS AND SUBJECT TO CHANGE WITHOUT NOTICE

CALLERS WELCOME - Please reserve goods by telephone prior to visit.



DATEL ELECTRONICS LTD., FENTON INDUSTRIAL ESTATE GOVAN ROAD, FENTON, STOKE-ON-TRENT, ENGLAND.

> SALES ONLY 0782 744707

TECHNICAL ONLY 0782 744324

# Amiga Arcade

# Cops on the run

Some computer games are jinxed, dogged with problems from the moment they leave the designer's mind. Mars Cops from Arcana Software is one such game.

The idea for this space age arcade adventure was thought up by company boss Max Taylor, who promptly got stuck into writing it. Some months later, bogged down and tired out, he passed the coding over to a freelancer, who in turn gave up the project when he couldn't translate Max's ideas into executable code.

New boy Nick Tuckett took over and was doing an admirable job until without warning, just two weeks before the scheduled release date, he too walked out on the company. Reliable sour-



What better place could there be for lovers to be alone

ces inform us that his disappearance coincided with that of Arcana PR manager Emma March.

The game casts you as Chuck Matthews, a member

of the UIPF, the Mars-based United Interplanetary Police Force. Which is why everyone calls them the Mars Cops.

You will be taken through

seven phases of gameplay. First comes the mission briefing followed by prelaunch servicing and equipping of your craft.

An animated launch sequence fires you out of Martian orbit ready to destroy any aliens or asteroids foolish enough to enter your sector. If you survive the onslaught you are rewarded with a re-entry and landing sequence, followed by postlaunch vessel servicing and mission debriefing.

"Only the most capable of pilots is going to come out of this one alive". Max Taylor told Amiga Computing. Max is now back coding the game himself in a secret Edinburgh hideaway. With any luck it will be ready for a £19.99 release by the beginning of September.

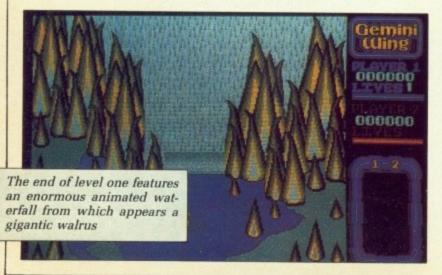
# Wing and a prayer

THE coin-op conversion to watch out for this month is Gemini Wing, a seven level shoot-'em-up featuring organic backgrounds full of mutated butterflies, ship-seeking snippers, giant salmon and other nasty breeders.

The simultaneous twoplayer option is where Gemini Wing excels. Extra weapons can be collected and carried behind your ship. But you have to be

careful because they can be stolen by both your playmate and the aliens.

The game has been developed by Krysalis Software for The Sales Curve. Difficulties enhancing the Amiga yersion's sound graphics have delayed its appearance somewhat, but Amiga Computing can reveal that it'll be in the shops before the end of August on the Virgin Games label priced at £19.99.



MPPED to be L potential Christmas chart topper is Hard Driving from Domark/ Tengen, a single-track test where speed is the aim.

Star Wars programmer Jurgen Freidrich has been working at Domark to convert the coin-op game,

# Christmas

carve-up

which was originally designed by Atari as a driving school simulator.

# And now for something

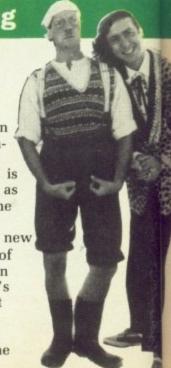
HELLO. We apologise most sincerely to those of you who are reading this story under the impression that it is in any way connected with the television programme Monty Python's Flying Circus. This was due to an error in the printing stage of the magazine.

This piece is in fact titled The Pleasures of the Dance, a story about a new collection of Norwegian carpenter's songs compiled by Oscar

Tritt...

Ahem. We apologise for the above apology. This apology was unnecessary

and appeared in the magazine owing to an administrative error. This story is not about, as stated in the above apology, a new collection of Norwegian carpenter's songs, but about the computer game of the



# All the latest news on the games software scene

# The legend

# lives on

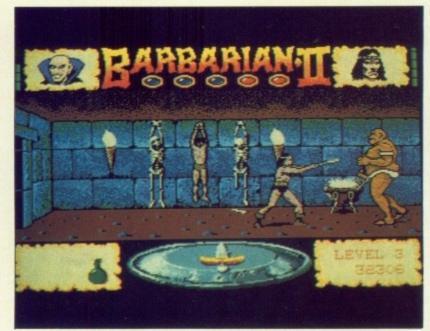
IT'S here, Barbarian II -The Dungeon of Drax, the eagerly awaited sequel to the game which got banned in Germany.

It has been programmed on the Amiga by Dave Chapman whose previous work includes such classics as Dan Dare II on the C64, Sorcery on the CPC and Scrabble on the Amiga.

Palace boss Pete Stone told Amiga Computing: "This is the definitive edition, containing all the playability of the previous versions but with improved colours and sound.

"All the sampled grunts, groans, thwacks and thuds of the ST version are there, but our sound maestro Richard Joseph has made full use of the Amiga's four-channel stereo to add a whole new dimension"

Work is already under way on Barbarian III, which is planned as the last in the series. That won't be here until next summer at the earliest. Meanwhile, Barbarian II is in the shops now at £24.99. We'll have a full review next month.



Programmer Dave Chapman has made sure there'll be no time to hang around in Barbarian II

# **Germans to release**

# crude simulation

RELINE, the German soft-ware house best loved for its animated dance intro to Hollywood Poker Pro, is to release a "business" simulation this September called Oil Imperium.

Instead of long lines of figures and tables, you will be with presented graphics and diagrams. All sorts of moves will be pos-

Buying, selling. trading, spying, merging even sabotage will play a part. Arcade sequences will be included for situations like drilling and fire fighting.

"It is very realistic simulation of a free enterprise system", says PR person Simon Harvey. "Stakes and risks correspond to the real business world".

# completely different

television programme Monty Python's Flying Circus...

The Norwegian Trentheim Hanna dance is held every 25 minutes in the town of Trentheim, in which the old ladies are struck about the head with round sticks and thrown into the fjords with their boots tied around

We apologise for that short extract from The Pleasures of the Dance which appeared in Amiga Computing owing to the same administrative error which resulted in the first apology. The rest of this article is now totally taken up with news of the computer game of the television programme Monty Python's Flying Circus.

Seriously folks, the licence to develop the game has been snapped up by Virgin Mastertronic, which has handed the programming job over to the highlyacclaimed Core Design. This will be Core's first game for Virgin, and it has been made clear to them that the original bizarre Monty Python humour must be retained while incorporating such classics as the Ministry of Silly Walks and the Dead

Parrot Sketch.

It should be ready for release early next year. Pardon? How much will it cost? How should we know? We were just asked to write a short story to publicise the game. We didn't expect a kind of Spanish Inquisition. (Loud noise, enter Palin, all together now...)



# REVIEWED

# THIS MONTH

97% F-16 Combat Pilot

96% Wayne Gretzky

Hockey 90% FOFT

89% Grand Prix Circuit

Honda RVF 88%

81% Skweek

79% African Raiders

78% Xybots 76% Phobia

76% Savage

72% Millennium 2.2

64% SDI

63% Time Scanner

61% Gold Rush 59% Licence to Kill

58% Circus Attractions

19% Navy Moves

# **MAX HACKS**

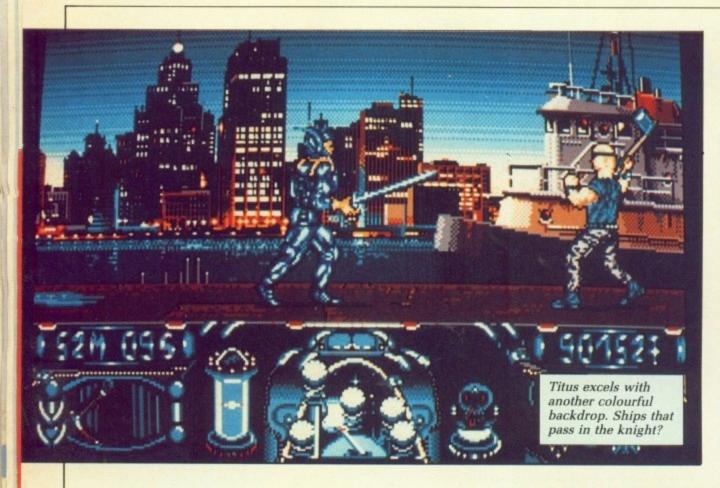
Populous

Forgotton Worlds

Lords of the Rising Sun

# Gallun Chart

ounup o	Last Month
Populous Electronic Arts £24.95	1
2 Lords of the Rising Sun Cinemaware £29.99	NE
Forgotten Worlds US Gold £19.99	4
Kick Off Anco £19.99	7
5 Silkworm Virgin/Sales Curve £19.99	8
MicroProse Soccer MicroProse £24.99	3
Blood Money Psygnosis £24.99	6
Gunship MicroProse £24.99	5
Millennium 2.2 Electric Dreams £29.99	10
Dragon Ninja Ocean	NE



# Shut that door!

TITUS is working on a new Amiga game due for release in October, Knight Force, an arcade adventure in the hack and slay tradition.

Nothing but a plot and screenshot at the moment. The former boils down to running around space sealing time gates in order to preserve the chronological balance of the universe. The latter looks as if the graphics will be up to the usual high standard of the French.

Your skills are the powers of a mighty knight, the courage of the legendary dragon and the agility of the soaring eagle. It says here. Hmmm. Let's hope the gameplay is better than recent Titus efforts.

# Impressions goes underground

Now that Impressions Software has amicably ended its run-in with Mirrorsoft over the backdrops for Chariots of Wrath, the development team of Graeme Ing and Robert Crack has started work in earnest on a space strategy called Emperor of the Mines.

Money is king in this wargame. Cast as the Emperor, you will be in command of a vast fleet of spacecraft which is exploring and exploiting the local mineral deposits.

Many hazards will have to be faced, including battles against the elements, mechanical failure, financial problems and the neighbouring warrior race.

Graeme, who left his job programming IBM PCs two years ago when he discovered the Amiga, is coding 20 episodes into the game, each with its own unique puzzle to solve. There will be 11 different types of craft to use.

Graphics artist Robert, who was trained as a physi-



cist, will be adding bar, line and 3D charts on which you will see information about the 200 moons awaiting exploration.

Developed on the Amiga, Emperor of the Mines will be out in September, price £24.99, on the new Plato label.

ALLE SUNT

# Aiming for double top

A NCO is to follow up the success of Kick Off with two more games before Christmas, Rally Cross and Player-Manager.

Rally Cross will be out first

on September 11 if
everything goes to schedule.

It is a six-track simulation of
rallying and will feature
what Anco boss Anil Gupta
terms intelligent racing.

"By that I mean computer controlled cars will try to avoid collisions, just as human drivers would in real life", says Anil. "The six tracks will not be simulations of existing rally routes, but will be designed instead with good gameplay in mind".

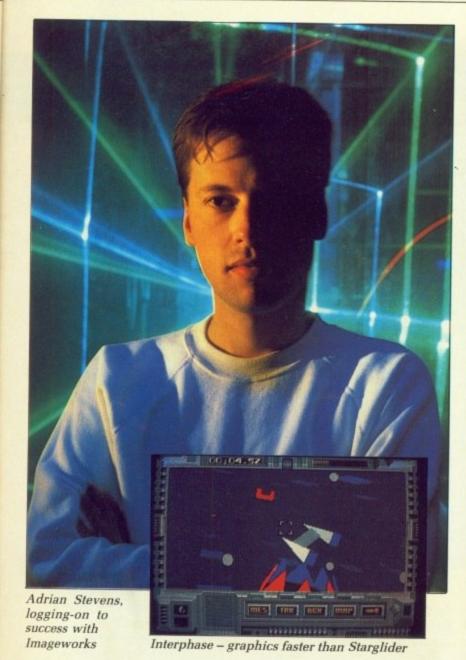
Player-Manager, which will be released in November, is a soccer simulation based on pure tactics and how ordinary events affect the team. "In Kick Off each player had four stats," Anil's eyes light up, "in Player-Manager they will have 11. The essence will be in determining the correct tactics for each game."

You will start your career at the age of 28 or 31 - Anil isn't sure which yet - as player-manager of a Forth Division team. The aim is to get into the First Division, winning as many cup matches as you can along the way in order to bring in some extra gate money with which to buy better, even foreign, players.

"Foreign attackers will play differently than British ones", says Anil. "They will run circles round defenders like Maradona does. That doesn't mean they are always better players, just different".

You will be able to choose whether to play or watch each game; at 28 you can probably handle 90 minutes on the pitch.

"Addictive's Football Manager can't be beaten as a financial simulation of soccer", says Anil with a dismissive wave of his hand. "Player-Manager will concentrate more on game tactics and everyday life. It is a totally different concept".



# **Daydream believer**

REMEMBER Tron, the film where Jeff Bridges gets sucked into a mainframe computer? The same fate can befall you in Interphase, Imageworks' new game from Adrian Stevens, a Stargliderstyle solid graphics program first previewed a year ago as a demo under the name of Mainframe to much dropping of jaws and low whistling.

Twelve months on there have been some radical changes, but while features have been added the breathtaking speed is still there.

Bridges only had to worry about what went on inside the computer; Interphase weaves a tale which is much more ominous, set in a future where leisure time is plentiful and filled by playing Dreamtracks, experiences stored by professional dreamers.

To share a dream you logon to a mainframe computer – a bit like playing Shades really. With a population hooked on other people's dreams, it is inevitable that the government will

twist this to their own advantage and the professional dreamers are made to record messages which will influence the proletariat.

After recording one particularly evil message the top dreamer decides that this is not on. But it is too late, nothing can get past the computer's protection system to retrieve a recorded Dreamtrack. Or can it?

You play the dreamer who, with help from an attractive accomplice, enters the computer to locate the security circuits and manipulate them, allowing your accomplice – who looks awfully like Imageworks' PR person Cathy Campos – to get into the mainframe security building and destroy the tapes. Richard Nixon would be proud.

Interphase encompasses the best features from the 3D games which have come before – graphics faster than Starglider, Carrier Command maps and an atmosphere all of its own. All you need is the nerve to enter the mainframe.

SO pleased with the sales of Populous is Electronic Arts that it has released a data disc of five new worlds called The Promised Lands.

Leading the way, and almost topical, is Revolution Francais, a land where typical Frenchmen gather around chateaux, windmills and cafes in their singleminded search for liberty, equality and fried snails. It's all done in the best possible taste; there are guillotines, but there is no gore.

In The Wild West cowboys and indians fight it out around teepees, forts and jails. Silly Land has larger than life people whose expressions change with the action, and Block Land is a world where everything is made from blocks, including the people.

Last, and by no means least, comes The Bitplanes, a land based on computers and development team

# **Vive la Populous!**

Bulldog's own place of work. Cans of Coke, cigarette butts and little ZX81s litter the landscape, which is made of programmers' desks and perforated listing paper.

Although you'll be able to use the playing skills you have already learnt with the game disc, each new landscape in The Promised Lands will need fresh and more complex strategies to complete.

Populous has been number one in the Amiga chart for three months running. "If this disc sells well", says EA Marketing Manager Dave Gardener, "there may be more". At £9.99 who can resist?



They seek him here, they seek him there, they seek those Frenchies everywhere

# F-16 COMBAT PILOT

King of the skies



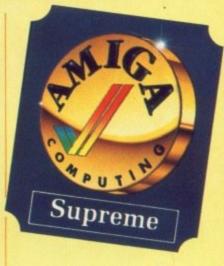
We'll cross that bridge when we come to it

LYING is difficult. It takes years and millions of pounds to train a fighter pilot. Yet the war cry among simulator buffs is "gimme realism". Well guyz, with F-16 Combat Pilot you got it. The game is *seriously* difficult

There is a quickstart option, but it is a bit late to worry about how to get the Westinghouse AN/APG-68(V) radar out of track-while-scan mode and into single-track-target mode when you have a Foxhound and a couple of Floggers unleashing 55kg

Aphid missiles at you. You must read the manual before making any serious attempt to play.

Most of the dashboard is taken up by three VDUs which can display 10 different types of information depending on what you are doing. I mean,



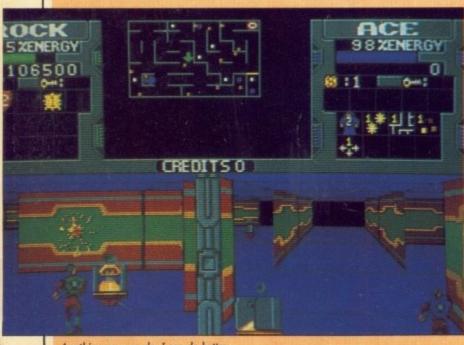
there's no point in using the instrument landing system while dog fighting.

Setting up the cockpit is down to personal taste. There is an instant combat mode, but you may prefer to have the artificial horizon, a special Smith's LCD design, instead of the weapons status, or Laura Ashley curtains instead of the canopy.

While taking the plane up for a quick tangle is fun, there is an ultimate objective – you have to complete Operation Conquest. To start this you must prove your worth in five areas: Dog fighting, attacks on enemy airbases, taking out strategic targets such as power stations, tankbusting and reconnaissance.



Gauntlet for the



Anything you can do, I can do better. .



WHAT really matters when you slip the latest arcade conversion into DF0:? Is it how good the original was, how good the Amiga version is or how faithful the conversion is to the money munching machine?

One theory states that any game

which makes it to the arcade is going to be pretty hot. If it cuts the ice there, it should make a very playable game at home

There is another theory that a game you want to spend 20 minutes playing in an arcade is not the same kind of thing you want to take home with you.

And there is a third theory. This theory, which is mine, claims that a good game for a home computer would be one which was perhaps a little too complex for the arcades.

Xybots is that game. There is a lot of depth to the plot built on the age-old 3D maze. You run around a complex of corridors picking up coins, extra weapons and energy. A friend can join you wandering around the same maze with a separate 3D view.



The F-16c, a Spitfire of the 1990s

Complete at least part of each mission and return safely to qualify.

Before taking off you can set the weather conditions, day or night and cloud base. For night missions you can carry the Lantirn, which gives night vision and can tie in with some weapons for automatic aiming.

The ground crew will recommend which weapons they think you need for any mission, but you can override this at a well drawn and animated hangar screen.

The F-16 is a single seater, so in place of a navigator you have a computer. Before take off you plot a course to the targets. This is then pro-

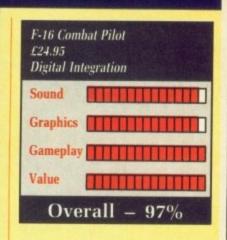
grammed into the flight computer which will calculate a bearing while you are airborne.

It would be impossible to say if this is an accurate simulation, anyone who knows has signed a piece of paper promising not to tell. But a stop-watch and some published specs revealed a true-to-life roll rate and rate of climb.

Flying is predictable, with a better frame rate than Interceptor, more accurate turning and banking than Falcon and none of the maths problems which afflict Jet. It is safe to say that this is more like flying a fast jet than any other Amiga simulator.

Digital Integration has a head start in these matters. Dave Marshall – the boss – used to program real military flight simulators and has worked on the Jaguar, Lynx helicopter and Harrier. He has built up a huge library of the technical specifications for the F-16c and knows who to ask for some of the less readily available information.

For the brave of joystick there is a two-player mode which allows you to link machines with a serial cable. The weapons and conditions are chosen for you, so it is a matter of skill as to who survives the encounter.



The game has pretty Falcon style ground-based scenes and some terrestrial detail when you are in the air. The ground is flat, with pyramid hills. I suspect other aircraft are quite detailed but at Mach 2 with heat-seeking missiles to worry about, my flying skills aren't up to checking. Yet. I am going to improve. F-16 will take a lot longer to master than Interceptor. But is much more rewarding.

There are few grounds for complaint. The graphics are a port from the ST, it doesn't allow you to put the save game disc into DF1: but these are niggles in a game which is worth every penny of the price, which is why I have given it the highest score yet any game has achieved in *Amiga Computing*.

Simon Rockman

# OTS

# 21st Century

While teamwork is the best way to take out the robotic monsters, especially if one of you uses a stun weapon, there is a race to the finish which will yield a bonus coin.

Money makes the game go round. At the end of each level you visit a shop. Here teamwork is really important. There are loads of accessories for sale. Some – like a higher level of energy, stronger shields and better weapons – only help one play. Others – like keys, and sensors which add detail to a plan-view map of the maze – help both sides. You can share and enjoy by giving coins to your comrade in arms.

Xybots was great in the arcade but there are things which thousands of pound's worth of dedicated hardware can do which an Amiga cannot. So something has to be sacrificed to effect the conversion. In the case of Xybots this isn't very much.

The game retains a high degree of accuracy, paying the price with speed. A lot of action on the screen slows things down, particularly when both players can see each other.

The attract screen animation has been retained but the scenes in the shop where one player waits for the other to finish have been cut. It's cute but no real loss.

More of a problem is the inability to turn and fire, imposed by having to use a standard joystick instead of the wacko arcade controls.

In the balancing act between playability and authenticity Tengen has scored a perfect 10.

Simon Rockman



# WAYNE GRETZKY HOCKEY

Watch the graphics puck up



SPORT simulations have a habit of falling short of expectations. They generally fit into two categories: Raving joystick wagglers and the million-parameter strategy marathons with no game to play.

With respect to TV football fans, we have yet to see a sport simulation which gets that critical mix of strategy and arcade action right.

Wayne Gretzky Hockey was voted Best Sports Simulation of '88 in the USA, where pounding the puck is as much an institution as the hot dog. They were bound to like it.

But bring it over here where no one knows who Wayne Gretzky is, and the odds are it's not going to sell. Which would be a shame.

After a surprising animation sequence followed by a good title tune and digitised HAM loading screen, you begin to feel you have something special in your drive. Something tells you that this piece of software was written for the Amiga by people who knew what they were doing.

The no frills Game Setup Menu is packed with options to click on. There are home team and visiting team columns. You can play either of the two, neither of the two, or both, where it helps if a friend joins you.

There are four modes of play. Control Player puts you in charge on the ice; all coaching decisions are handled automatically. You move a mouse-controlled cursor around the rink and the player you are controlling, easily recognised by his

white helmet, follows the cursor.

Combinations of cursor movement and button-presses control his actions, right down to grabbing an opponent and holding him against the boards. In two-player mode, your friend would control his man on the opposition with a joystick in port two.

For people who hate or are no good at arcade action, there is a Coach Only mode. Here you are responsible for setting up the 18 team formations and deciding when to make changes during a game.

The best part of Coach Only is that you don't have to stop the game to make changes. Function key presses cause the team to start a different play or to come off the ice while the next formation piles on.

In this simulation you don't just choose parameters before the game then sit back and watch – you have to continue taking coaching decisions throughout the game.

Once you've mastered both the above modes you can choose to play and coach together. Difficult, but it gives you an incredible feeling of power over the game's outcome. Ice hockey is fast – one bad decision or play and you could find yourself a couple of goals down.

The fourth mode of play is my favourite – Wayne Coaches. Here the computer handles the coaching and the play on the ice. Set both teams to this mode and you can sit back and feast your eyes and ears.

The sound effects are sampled from a real rink. The puck being slapped, the crash of bodies and puck against walls, the murmur and roar of the crowd, the referee's whistle – they are all there to add even more realism.

If you missed the action when a goal is scored, an instant replay option lets you view the last eight seconds of play in normal, slow or fast motion, forwards or backwards. Nice touch.

When play is stopped because of a foul the viewpoint changes to 3D with an action replay screen hanging from the roof. Here you see an animation of the referee's sign language



# Wavne Gretzky Hockey £24.99 Bethesda Softworks Sound Graphics Gameplay Value Overall - 96%

for the foul he has blown for. When fights occur - I have yet to instigate one - the action is shown on this screen.

the

and

s to

and

ght

10

3D

im-

Teams can be set to play at any of four difficulty levels ranging from High School to Pro. You can set the



periods to be 5, 10, 15 or 20 minutes. Play can be either Slow or Normal. For Normal read Fast.

Games and teams can be saved or loaded at any time, even during a period. Four teams are supplied. while an editor allows you to make up your own teams, giving each player strength ratings in 11 categories. Give every player a rating of nine in every category and you'll have an invincible, if not very realis-

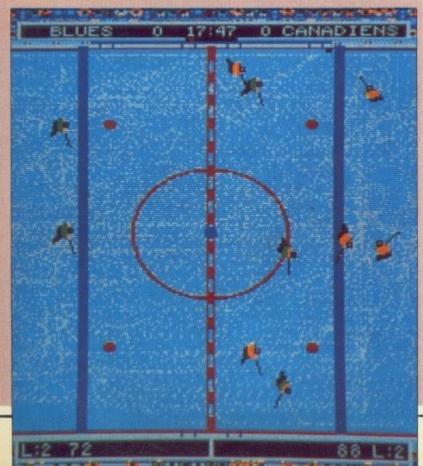
You can display game stats and team rosters or send them to a printer. When coaching, printouts are indispensable.

The short manual explains all the options and how to use them clearly. There is even (thank heavens) a brief description of the rules of ice hockey. plus hints on coaching and controlling players.

What it doesn't explain is that the game will not run properly on a machine with extra memory, which is weird because the box claims additional graphics with 1 meg. Sorry chaps, got to knock some marks off for that.

In the end it didn't matter, it was worth unplugging everything and upending my machine. Without a doubt, Wayne Gretzky Hockey is the most accurate and enjoyable simulation of a sport I have ever had the pleasure to play.

Jeff Walker



# SAVAGE

Looking for love



AVAGE isn't your ordinary barbarian. He's psychic, has great magical powers and is going steady with one maiden. The loss of the latter two has made him angry. Not mildly angry, with the type of anger that would make any rational barbarian wait a couple of thousand years for someone to invent MPs and then write and complain, but really quite astonishingly angry indeed.

And to cap it all, whoever nicked his magic and his love has not only imprisoned him, but has also made the mistake of leaving him his battle axe. Someone, somewhere, is going to regret that.

So it's off we jolly well go down the dark and dank corridors, putting cold steel - OK, cold iron for the pedantic - to the many foes that block his way. Useful weapons are dotted about, and some of the foes relinquish treasures, energy potions and orbiting shields when you zap 'em.

Occasionally you get to meet midlevel guardians, which are best tackled by keeping running. The platform sections - of the fiery pit variety will have you digging out your Spectrum and Manic Miner to hone your jump timings.

In the first level it's almost a shame to destroy the enemies because, thanks to artist Nick Bruty, they're rather well done. Besides, killing things makes a noise which interferes with the tune - and you wouldn't want to do that, would you?

Kevin Collier, who did the tunes and the SFX, has produced the best set of noises ever to emanate from the Amiga to date. Many people have jammed sampled sounds in some semblance of order before, but Kevin's stuff in this game really does put some arcade machines to shame.

The second level, where Savage discovers the whole escapade is a trick and he must return to the castle dungeon, doesn't seem to be as well thought out as the first. It involves charting a course - Space Harrier style - through hideous monoliths and shooting various static nasties. but something's missing. It's got neat graphics, good sound, but the controls don't work quite convincingly.

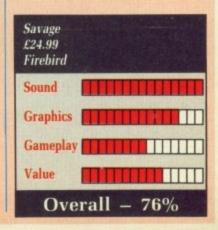
Level three - taking Savage's eagle through the dungeon - has better gameplay, good sound, but only competent graphics. It's also got a yukko bit when the eagle gets nixed. Blecch!

The last two levels can be played without completing level one; you only get a single life, but at least you won't be completely stuck if you find the first level too hard.

There's plenty there - two discs full - and level one is great, especially if you liked Beyond the Ice Palace, Ghosts 'n Goblins and similar types. But I have my reservations about level two.

You'll either flip over it or express a complete lack of interest.

Stewart C. Russell



# FOFT

# Better than best



T is going to be hard to review FOFT without mentioning Elite. But I'll give it a go.

FOFT is very like Elite. Oh, darn it! Well it's true. To say that the author borrowed some concepts is putting it mildly, but since nearly everything which has been borrowed has been improved upon, this is not necessarily a bad thing. I keep expecting to meet Commander Jameson every time I dock and be able to buy him a drink.

You start docked at a space station in orbit around a rather dull planet. You have nothing but a ship and 150 credits to your name. Your ship comes equipped with two computers, one for navigating and one for general use. The latter is fully programmable by you in a Basic-like language called Simple.

It also offers you access to the outside world by using GalacticNet, the 21st Century equivalent of Micro-Link, where you can talk to other pilots, deal in cargo or arrange to re-fuel and equip your ship.

Conversations with other pilots are

of a taxing nature because they all seem to have the same grasp of the English language as a certain Spanish waiter in a certain Torquay hotel. If you do manage to get your point across you will be able to make some lucrative black market deals. Like this:

Me: Where are you going? Them: Don't know. Me: Why are you going? Them: Because! Me: Erm. Want to buy some drugs?

(The rest of this conversation is strictly business.)

The FOFT universe contains the regulation number of dimensions. Instead of a flat 2D collection of stars, we are presented with a 3D rotating spiral galaxy. Plotting a course involves zooming in and picking the shortest distance between two stars, taking depth into account.

Animated scans of the multi-planet solar systems are interesting to watch and very useful because they give vital data on the planet you are visiting and what sort of cargo they may want to buy from you.

No expense has been spared in your spacecraft, which comes complete with the latest interstellar jukebox: Press a key and a menu of 20 classical tracks appears for your delight. Everything from my favourite Vivaldi pieces – the largo and allegro from Spring – to some Swan Lake care of Tchai... Tchaicof... that Russian bloke.

The Blue Danube is extremely conspicuous by its absence. It may take you some time to get out of the habit of humming it on final docking approach.

Once you have wheeled and dealed your way to riches life may become

rather dull. Time to phone FOFT HQ and ask for some freelance hero-type work. Sure enough, you will be appointed to a mission which will earn you some more money and street-cred points if you complete it successfully.

A typical first mission will have you acting as escort to a group of unarmed cargo craft. Looks like we got ourselves a convoy. Yee- hah!

Graphics are solid 3D, smooth and fast. All the spaceships whizz past at a frightening rate, and you have only a few nano-seconds to sigh wistfully at the loss of the look left/right/behind option of Elite before you are fighting for your life as some pirates try to steal your collection of towels. It's a hard life being a hero.

If your ship gets damaged - perish the thought - you can assign some repair droids to fix it.

There is even an unexpected bonus in the form of a planet landing sequence. Re-enter and skim over the glorious 3D scrolling surface until you reach the airport. Landing on the planet will enable you to get better



prices for your cargo. This section of the game pays more than a passing resemblance to Virus, but who's complaining?

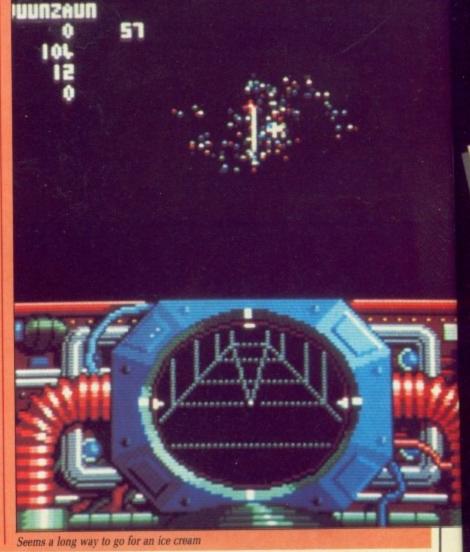
Everything you possibly wished for while playing Elite has been granted in FOFT. Talking to aliens, landing on planets, more music, more weapons, a selection of star drives – the lot! You even get a docking computer as standard.

Criticising FOFT would be petty. Everything is great: The graphics, the music and the incredible gameplay. FOFT has obviously been written by someone who was not content to play the best space game available – he had to write it himself!

John Kennedy



Fly me to the moon, to to te-tum tum te tum tum tum



# The dawn of a new age in electronic communications

MicroLink

MicroLink takes on a completely new look on October 1, with a vast expansion in the number of the services available and the opening of new telephone access points all over the UK – allowing most subscribers to contact MicroLink for the cost of a local phone call. Find out more by mailing this coupon:

Please send me more facts about MicroLink

Name.

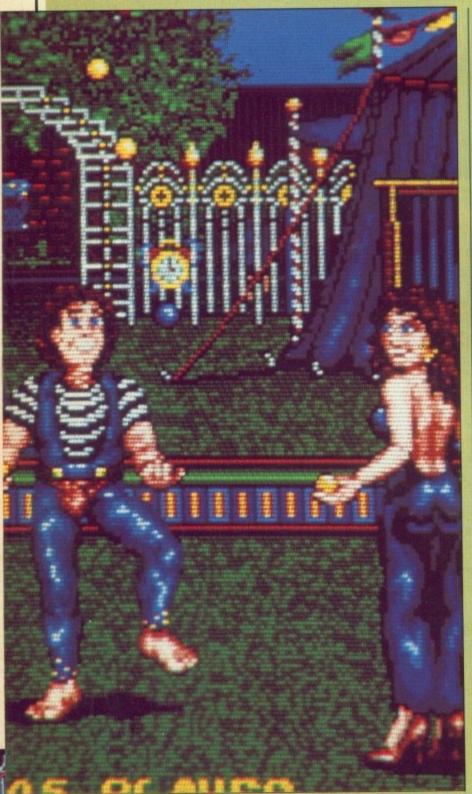
Address

SEND TO: MicroLink, Europa House, Adlington Park, Adlington, Macclesfield SK10 4NP.

icroLink turns any make of computer, from the inexpensive home micro to the most sophisticated business machine, into a complete communication centre. It becomes a telex machine, a fax machine, an electronic mail terminal, a retrieval tool that lets you search out and store data from the world's leading electronic libraries. It gives you instant access to the credit status of every company in Britain. It keeps you up to date with all the latest news, sport and weather. It becomes a giant catalogue that lets you order goods directly from your keyboard. And it's always in action -24 hours a day, seven days a week. Through MicroLink you can key into more than 1,200 business databases. And you can communicate directly with electronic mail networks all round the globe, from Britain's Telecom Gold to the giant 500,000-subscriber Compuserve in the USA. And the cost? From as little as 25p a day.

# **CIRCUS ATTRACTIONS**

Life at the top



Keeping those balls in the air

Have you ever wanted to run away from home and join the circus? What better way to get the urge out your system than with the latest Golden Goblin release, Circus Attractions.

This double-disc game offers five different performing arts type games. These include trampolining, juggling, knife-throwing, tightrope walking and clown-jumping, which doesn't involve a motorbike and a lot of worried little men in red noses, but three clowns being catapulted across

the circus ring using planks placed across barrels.

By careful timing and some careful aerial manoeuvres you can land the hapless little fellow on the correct part of the plank and send his compatriot into orbit.

This is by far the best game and looks very funny. The animation and spot effects are good, but after a short time it dawns on you that this is all there is. There are clowns. They jump.

The juggling is disappointing. Not



Allez-oops. Squelch. Oh dear

only is it technically inaccurate - you are reading a regular juggler here - but it is downright silly as well.

Just when you get the hang of juggling six tennis balls you are run down by a midget on a motorbike. This game is not kind towards small people. Perhaps the programmer was attacked by a garden gnome when a child.

Trampolining next. You get on the trampoline and bounce up and down. The audience get bored and the game stops. I know how they feel.

Tightrope walking is, erm, different. A female assistant walks across a rope suspended above the ring. If she wobbles, which she does with alarming regularity, you make her wiggle her arms about to try to regain her balance and so prevent her from falling.

Various jumps and somersaults can be attempted if you feel overly confident and want to fall to a horrible death. The computer makes a "Wheeeeee" noise and your badly overworked imagination must do the rest.

Knife-throwing proves an interesting experience. An assistant hands you knives which you aim and throw at a human target tied to a large rotating wheel. The assistant will occasionally pass you a stick of dynamite which will explode when you take it. If you don't take it, the assistant will explode.

Quite why she tries to blow you up is never explained. Perhaps she is part of the terrorist wing of the Female Assistants and Midgets against Exploitation movement.

Each game can be played individually, or with someone you



wish to get into an argument with. In juggling, one player passes the balls to the other. With the jumping clowns, each player takes it in turn to control a would-be astronaut. Similarly with the other games – no direct competition, just two players.

The music is of the predictable Circus March variety. On the Amiga it is beautifully played, but that doesn't mean it is enjoyable. After hearing the same little ditty over and over again every time you accidentally fall off the trampoline, you will reach for the volume control.

The instruction manual has been translated from the original German and is very funny. It is actually meant to be funny. The bad translation adds to it.

But it doesn't change the fact that what we have here is a collection of five short gamelets tied together with a common circus theme. Each game will last about five plays before becoming boring, and that includes the two-player options. It makes a change from shooting aliens, but then so does washing the car.

John Kennedy



HARDWARE & SOFTWARE
SPECIALISTS
6 FOREST CLOSE
EBBLAKE IND EST.
VERWOOD, DORSET



EXC. VAT



0202 813176



FREE DELIVERY

# + FREE £220 SOFTWARE

INCLUDING:- •PURPLE SATURN • HOSTAGES
• INTERNATIONAL SOCCER • WINTER OLYMPIAD

• SPITTING IMAGE • STARGOOSE • BACKLASH

· QUADRALIEN · ELIMINATOR

FANTASTICK F3 JOYSTICK

TV MODULATOR

£339

AMIGA A500/ PHILIPS 8833

£467

AMIGA B2000/ PHILIPS 8833

£1049

INC ACCESSORIES

# **AMIGA A500**

INCLUDING:-

- · MOUSE · WORKBENCH
- · UTILITIES · MANUALS
- · BASIC · TUTORIAL
- TV MODULATOR

£299

# AMIGA B2000/ PHILIPS 8833

INCLUDING:-

- MOUSE WORKBENCH
- · BASIC · UTILITIES · MANUALS
- XT BRIDGE BOARD
- 20Mb HARD DISK

£1369

# **AMIGA B2000**

INCLUDING:- MOUSE • WORKBENCH • BASIC • UTILITIES • MANUALS

£869

# **A500 HARDWARE**

A500 + I V MOD	£305
A500 + £200 of GAMES	£339
A500 + 1084(S) HIGH	
RES COLOUR MONT	€520
A500 + IBM DRIVE	2399

# AMIGA EXTERNAL DRIVES

Cumana Cax 354E	58	7
AF880	27	8
RF302C	€7	4
Supra 20mb H/disk £	49	19
* All drives 1mb + on/off switch	*	

ng

ect

ble

iga nat ter

ou

int

# **AMIGA ACCESSORIES**

A501-512k RAM£	113
TV Modulator	£22
Mouse Mat	Call
	Call
	Call
0.0 .0011 .00000	

# COMMODORE C64

C64 Hollywood	£129
	£173
1541CII 5.25 C64 drive	£139
1581 3.5/800K C64 drive	£112
Oceanic 5.25 C64 drive	£109

# **A2000 HARDWARE**

A2000 + 1mb RAM£869
A2000 + 1084(s) monitor
+ bridge BD + 20mb H/disk £1390
A2000 + 1084(s)£1049
20mb hard disk£269
XT bridge BD£269

# A500/A2000 MONITORS

1084(s) High res monit£	219
Philips CM8833 High res £	199
	Call
1900 C64 - Mono£	119

# **PRINTERS**

Star LC10 (P) 130CDS	£149
Star LC10 Colour	£199
Star LC24-10 (24 din)	£305
Citizen 120D	
Commodore MPS 1230	£119
Panasonic KXP1124 (24 pin)	£279
Panasonic KXP1081	£149
Epson LX800	£158
Epson LQ500	£250
Epson FX850	£409
Epson FX1050	
Epson EX800	
Epson EX1000	£419

# **COLOUR PRINTERS**

Citizen HQP40	£352
Epson EX1000	£543
Hewlett Packard Pai	nt Jet £689*
NEC P6+	£508
NEC P7+	£624
Star LC10	£195
Xerox 4020	£949
Hewlett Packard Pai NEC P6+ NEC P7+ Star LC10	nt Jet £689* £508 £624 £195

# LASERS

Citizen overture	£1	199
HP Laserjet II	21	825

# **BUSINESS S'WARE**

	Odio L
AEGIS Sonix	
Animated Images 3D	£99
City Desk	
Deluxe Video	£49
Deluxe Music	£49
Deluxe Paint	£49
Digiview Gold	99
Home Accounts	
Mailshot Plus	£39
Maxiplan A500	£69
Music Studio	£23
Organiser II	£49
Page Setter	
Page Flipper Plus	£24
Photon Paint	£49
Photon Video	Ring

Professional Page	£175
Pro Writer 2	
Publisher Plus	£69
Sculpt 3-D Animate	£102
Sculpt 3-D	
Superbase II	£59
Superbase Personal	
Superbase Professional	£169
TV Show/Text	
Word Perfect 42	£169
'Works'	
Zumafonts	

# **UK TOP 19 GAMES**

No.	Sale £
1 Falcon	19.99
2 Sword of Sodan	19.99
3 Dragon Master	19.99
4 Gales Dragon's Domain	
5 TV Sports Football	19.99
6 Dragons Lair	19.99
7 Victory RD	19.99
8 Int Karate +	
9 Speedball	19.99
10 Who Framed Roger Rab	bit 19.99
11 Operation Wolf	19.99
12 Lombard RAC Rally	19.99
13 Elite	19.99
14 Motor Massacre	19.99
15 Mickey Mouse	19.99
16 Captain F122	
17 Purple Saturn Day	19.99
18 Technocop	
19 Rocket Ranger	19.99

# **ALL PRICES EXCLUDE VAT**

AND EXPORT HOTLINE

2 0202 813176

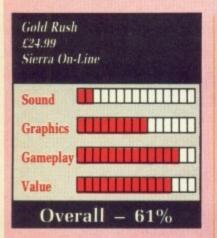
OPEN MON-SAT 9am-5.30 pm

All prices and manufacturer's specifications subject to change without notice.

My computer is			
enclose cheque/PO for £		_ inc VAT.	
Or charge my Access/Visa No.	Exp. date		
			VISA
Name	Signatu	ire	
Address			

# GOLD RUSH

Strike it rich in California



OES the idea of getting money for nothing appeal to you? Of literally picking your living off the ground? To the population of North America in 1848-49 it did. And it began one of the largest mass migrations in history.

Gold Rush from Sierra On-Line is one of the latest offerings in the 3D Animated Adventure series. These take the form of a sort of film in which you play the leading role, moving your character around a 3D landscape and interacting with other animated characters and objects.

Movement is via keyboard, joystick or mouse. The mouse control is good because all you have to do is position the pointer where you want to go, hold down the right button, and Jerrod will walk towards it.

It can be a little difficult getting in and out of doors this way, a joystick is better there.

The game opens with a well animated and quite humorous title sequence which can give you a few useful hints if you watch closely. The sequence leaves you, Jerrod Wilson, on a bridge in Brooklyn circa 1848. The rest is up to you.

Everyone you meet seems to be talking about the gold strike in California and of all the people heading out that way. You must make preparations for your departure and stock up on things you think you might need for your trek.

And decide how to get there,

because – without giving too much away – there are three ways to get to the gold country, two by ship and one overland. This is an adventure with a multiple-route solution. It would be nice to see more.

One of the first problems you may face is being desperately short of cash, although your credit is still good in a few stores. Perhaps your bank manager would be sympathetic, or you could try to sell your house before the market collapses again.

Points are gained for making correct decisions. Some are given just for being a nice guy, like if you put flowers on your parents' grave. This means you always have something to aim for. Even if you successfully complete the first stage of the adventure, you may have missed something that would have given you a perfect score.

The animation is fairly smooth but in a rather low resolution, which shows its PC ancestry. There is generally quite a lot going on in each scene. Some of the animations are entertaining, although they can be slow.

One annoying problem is that on an unexpanded Amiga most screens have to be loaded in from disc each time and although a 1 meg machine will cache several screens, there is still a second or two delay between them because they have to be decompressed.

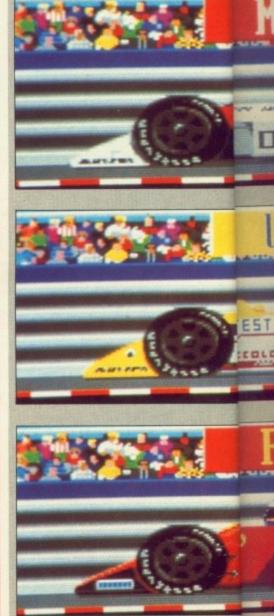
The sound effects are terrible. Despite a few nice musical jokes it is imperative for your sanity that you turn the sound off.

The game comes on two discs and you certainly get your money's worth with all the booklets, maps and expensively printed instruction cards.

One of the books is a short history – more than 80 pages – of the gold rush era. This is also used as a novel way, of security (pun intended). Instead of asking you for a specific word from the book it asks you a question on the text. It gives you a hint as to which page to look on.

One last point: Gold Rush multitasks, so if you have the inclination, the memory and a multi-tasking brain you can run other programs at the same time. Or even play two games of Gold Rush at once. Or three. Or four. Or...

Green



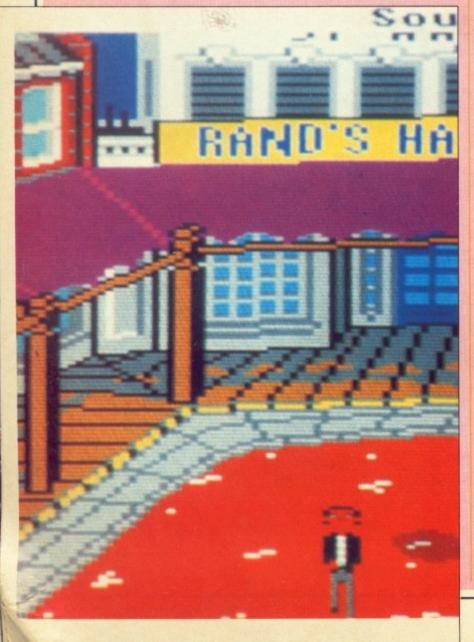
Go for broke with three top cars

STRANGE fact number 4,061: Major companies pay massive sums to advertise on the sides of racing cars which flash past the intended audience at speeds averaging more than 150 mph. It's a funny old world.

Accolade's Grand Prix Circuit has taken these high-speed advertising hoardings and built a game around them. Not that there was much design involved because Grand Prix Circuit follows the real Formula 1 championship almost to the letter.

As far as presentation is concerned, the view from the cockpit is similar to Accolade's recent Test Drive II. The cockpit has very few working controls – you've got exactly what you need, a rev counter, steering wheel, gear lever and damage indicator.

This display remains relatively constant across the three cars on offer



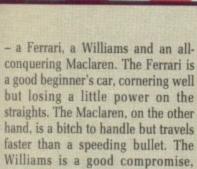
# **GRAND PRIX CIRCUIT**

Wah Nige rides again









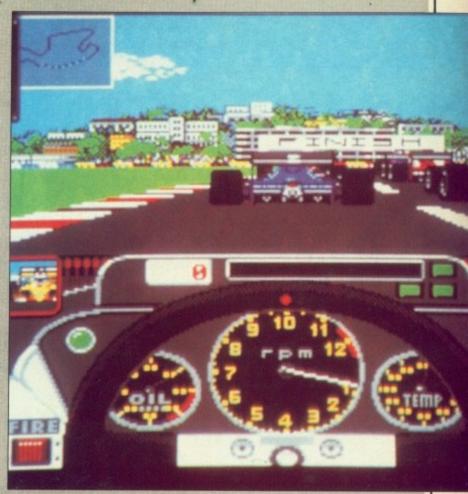
admirably in a straight line. In itself, working your way through these three would be enough variation, but GPC also offers five skill levels. The first takes care of the gear changing and endows the car with near total invulnerability from crashes.

From level two upwards the going gets tougher, with even the relatively user-friendly Ferrari proving quite a handful in the top flight.

There are eight circuits in all, taking in Brazil, Canada, Britain, Germany, Italy and Japan plus the two street circuits of Detroit and Monaco. Any can be used for practice purposes before entering either a single contest or a full eight-race championship.

Points are scored in the usual way - nine points for a race winner falling to a single point for sixth place. A





Cockpit view of a super simulation

save and load option allows you to take a rest at any stage, with up to nine separate games accommodated.

So much for the options; how does the racing feel? Well, I've never taken a car around Hockenheim or Silverstone - but I know a man who has and he's completely over the moon with GPC's recreations of some of his favourite circuits. The achievable lap times are accurate to tenths of a second, as are the default lap records and opponent's times.

There are a couple of little faults to rain on the parade. In fact, a lack of rain is one of the most serious. Imagine an entire Formula 1 season played out in blazing sunshine with the wet tyres staying in their packing crates throughout. Very unlikely.

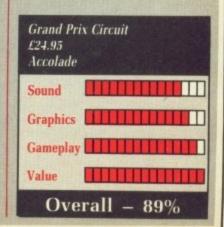
On a similar note, the opposition may vary in ability, but one thing remains constant - they all drive impeccably safely. There's no need for track marshalls or a system of warning flags because if there is a prang you can bet your exhaust pipe that you'll be involved.

The only other real problem is the flatness of the tracks. A few hills and bumps wouldn't have gone amiss, especially in Monaco, which is notorious for the steepness of its hairpin

Otherwise realism prevails. Even at the lowest level, the car steers accurately - it's all too easy to let the tail end slide out when cornering, and it's easier still to overcompensate. The backgrounds vary from circuit to circuit to generate some sort of character. Even a three-lapper needs superhuman concentration.

Add a couple of little features such as the speedy wheel changes and the ever so polished presentation and Grand Prix Circuit amounts to the most complete simulation vet of high speed car racing.

Ciaran Brennan



# HONDA RVF

Ride hard, die free

LLI have is a red bike, six gears and the truth. So said Bob Dylan. Well, almost. Honda RVF from MicroStyle has arrived. Silverstone, Brands Hatch, Donnington Park – it's got 'em. So come on you target for faraway laughter, and ride.

If you fancy yourself as Joey Dunlop or you saw Silver Dream Machine and thrashed your moped up and down the block for months, then this is the thing you have been waiting for.

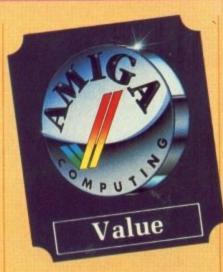
Take your mean machine for a practice before the big race and suss out the circuit. Slide around the bends and gun it down the straights. Watch out for the diesel patches and puddles which slow you down.

Oh no, a hairpin. Slip it down a few cogs and lean hard. Feel your knee scrape the track. Fight for control. Get a good time and you could be in pole position.

The main object is to compete in a championship season consisting of eight races, and to get your licence upgraded so you can race against even better drivers next season.

A championship table is kept and updated each round so you can see how well you are doing. Points are awarded, obviously, depending on which position you finished the race.

I am pleased to point out to members of OASIS – the Organisation Against Sexism In Software – that a female rider is included in the championship. Although it's difficult to tell under all that leather gear. She's quite good, too.

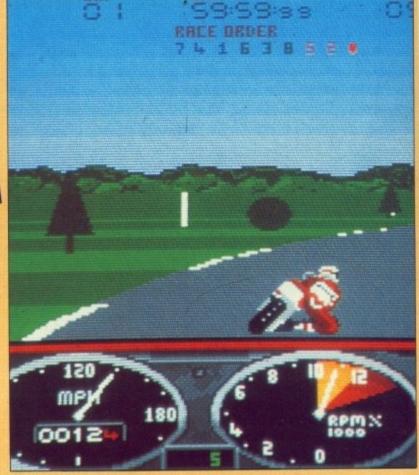


The format is that you do a spot of practice – you don't have to, but it makes it easier – and then race for 5 to 25 laps in each of the eight races. This can take a bit of time and your joystick hand will be well knackered by the end of it. Then you have to do it all over again.

A whole series of championships could take all day to play. Even the most avid biker may be a bit bored by the end of this. Fortunately there is a Datalink option – a parallel one strangely enough – so added enjoyment can be had bumping a friend off the track.

Control is by joystick, which is strange considering the spate of race games offering a mouse control option. Generally the mouse is more responsive and in some games necessary to beat the best lap times.

Of course you need to be superdextrous and have a mouse mat the size of the actual track to use it, but it's nice to have a choice.



Brands Hatch here we come

If the unthinkable should happen and you lose it on a bend, you stand a good chance of crashing into the assembled detritous at the side of the track. In a most bone-crunchingly realistic animated sequence the bike will roll, you will roll, and you will both end up in a heartbreaking heap.

Then what? You get back on, of course. Push start your vehicle and get back in the race. The only damage you're likely to suffer from a head-on with a stationary tree coming in the other direction, apart from wounded pride, is a broken speedo and rev counter, which can be fixed easily in the pits. Of course, real bikers don't need these newfangled gadgets.

Amazing graphics really do give you a good feel of the actual track – hills and all – as you race your Honda past the obligatory red and white kerbstones into the nicely graduated

Realistic graphics, realistic control, realistic sounds, realistic racing, realistic thrills. So if it's raining out, leave the Superdream in the drive and take your Honda for a spin.

Honda RVF

Green



Sound Graphics Gameplay Value Overall - 88%

# Lombard RAC PARAMETERS





See the driver steer and change smoothly through each of the gears



Drive down twisty lanes at night with an incredible 3D view of the road



Use all your powers of concentration to negotiate the mountain range



Build up or repair your car at any tim in the well-equipped workshop

# Five . . . four . . . three . . . two . . . one . . . GO!

Your 300bhp Ford Group A Sierra Cosworth roars away from the starting line, skidding round hairpin bends, as you speed through unfamiliar, ever-changing terrain... in a race where every fraction of a second counts!

Lombard RAC Rally recreates all the excitement of the world-famous rally – with the help of RAC drivers who quarantee its authenticity.

Complete the five stages – down winding tracks, through verdant forests and over precarious mountain ranges – with the additional hazards of night driving and fog.

Repair damage and add new features to your car in the workshop, and earn money for spares by taking part in a TV interview.

This is the official simulation of a lifetime . . . will your skills measure up to the challenge?

● Inside every box: A detailed 16-page booklet containing a history of the rally and technical specification of the Cosworth, 15 maps to help you plot out your course, and a colourful sticker to commemorate your participation in the rally.

MANDARIN

nage d-on

the

rev ly in lon't

give ck -

nda

hite

ated

trol

eal-

save

ake

een

in association with



'Totally addictive . . . a breath of fresh air' - Atarl ST User, January '89

'Thoroughly engrossing... highly recommended... the best controls I've encountered in any computer race game' — Computer and Video Games, January '89

'The definitive racing game . . . Overall 95%' – Computer Gamesweek, November 5-15, 1988

'An absolute must? - ST Action, January '89

Atari ST Amiga (9157) (19829)  I enclose a cheque f made payable to Ma Please debit my Acc Signed Name Address	or £24.95 andarin Software (5729)
Database Direct, FREEPOST, Tel: 051-357 2961.	PostcodePostcodePostcode

# SDI

# Over and over again



Playing politics is boxing

THE Strategic Defence Initiative was Ronald Reagan's attempt to solve the world's nuclear weapons dilemma by building more nuclear weapons and putting them into space.

No, it didn't make any sense to me either. I always knew that bloke was one sandwich short of a picnic. In typical paranoic American programming style, those darn babyeating Soviets have launched an all-out nuclear attack on the innocent western world. Sigh. As you happen to be in orbit around the earth at the time, the onus is on you to prevent global catastrophe.

To do this you have an SDI satellite



Who would want to bomb a publishing company

which can fire laser beams in all directions and destroy anything that flys past. It has a style very reminiscent of Missile Command.

A unique system whereby you control both the satellite and its weapons sight at the same time is used. It's not hard to see why it is unique. If you play using nothing but the mouse, then pressing the left mouse button will enable you to guide the satellite. Not pressing the left button will move the sight. Pressing the right button will fire your weapons. If this sounds tricky, then I have described it perfectly.

If you have a joystick plugged in as well, you can control the satellite with your other hand. This program will make you ambidextrous if nothing else. A friend might be persuaded to perform this highly-skilled task for

you.

The gravity of the earth's peril becomes clear as several thousand missiles (I've told you a million times not to exaggerate. Ed) start scrolling from right to left across the screen. Trying to aim your sight on each one individually is a task that even the most ardent mouse user will find impossible.

att

eve

wa

ave

are

da

Wa

It is at this point that what must surely be the ultimate nuclear deterrent becomes apparent in the form of holding the fire button down and dragging the mouse frantically across the desk. All this time you must be ready to move the satellite out of the way of attacking space debris by either using the joystick or by judicious use of the left mouse button.

It soon becomes apparent that no

# TIMECCANNED



F you think that bumpers are only to be found on cars, that tilt is a tropical soft drink and flipper is a dolphin, then this game may not be for you.

If all this jargon means something to you, then you probably had - or are still having - a wasted childhood.

The first thing that really strikes you about Timescanner is that the

ball isn't silver, but green. Aside from that the table closely resembles the kind you may find in any decent arcade.

If you're wondering how it manages to fit a decent sized table into one screen, then wonder no more. It doesn't. Instead the screen flips between the top half and the bottom.

You may also notice a small hole near the top of the table labelled Time Tunnel. Activating this will send you to the next in a sequence of tables. Yes, not only is this a multiple-ball game but also a multiple-table game, a mechanical nightmare not even Klaus Kinski could have dreamt of.

The first level is called Volcano. The objective here is to spot - or light-up, for non-enthusiasts - all the letters in the word "volcano" by getting the ball to hit a target at the end of a glass tube. Every spotted letter treats you to a piece of animated trickery as the volcano in the background gobs out some lava.

The second level is Ruins, the object here being to fire all your balls down the collect hole for a multiple-ball finale.

The third play area is called Pyramid and features some funky Egyptian-style background music. The aim is once again to spot the letters, but this time by hitting the relevant targets.

There is an undocumented table that can only be played once you have successfully spotted all the letters on the other three. I'll say no more because it's a secret. A worrying thought is that Timescanner requires one megabyte, a fact which the packaging and adverts fail to mention. I can think of few things worse than spending cash on something only to find you can't use it. Perhaps this was an oversight on Activision's part. I hope it was nothing more sinister.

Graphically the game is quite pleasing and the theme tunes are pretty good. But there is something missing. I think it's the physical element. There's no room to vent your frustration on the machine, no room for latent telekinetic powers to manifest themselves. The real thrill of pinball is that it is physical. Computerising it can only detract from that. Nice try though.

Green

# SDI £24.99 Activision Sound Graphics Graphics Gameplay Gameplay Overall - 64%

penalty is incurred for letting the missiles past, other than a slight drop in the overall score. As long as the attacking spacecraft are destroyed. everything is hunky dory.

sand

imes

lling

one

the

find

must

lear

the

OWN

vou

pace

k or

ouse

yte

k of

tash

an't

ight

was

rite

are

ent

no

m-

If all the scrolling baddies in each wave are destroyed and your scoring averages are marked as Perfect, you are treated to the appearance of a dancing duck. As if saving the world wasn't reward enough...

On a personal level I find this sort of jingoistic game as offensive as others find Strip Poker programs. But forgetting the plot for a moment, what sort of game lurks underneath? Not a very good one I'm afraid.

The gameplay leaves a lot to be desired. 12 levels of missiles scroll past relentlessly with only minor variations of attacking aliens. Play soon becomes dull. The graphics are very pretty, but the beauty is only skin deep.

John Kennedy

# DIVIVEER

You'll be tickled pink

EHIND the facade of a harmless computer game, Skweek hides a weighty political allegory. Nothing to do with Nigel Lawson, but a tale of invasion, oppression and final glorious revolution, told in Play School terms.

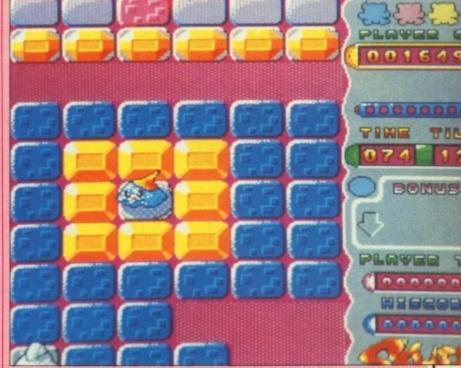
The Skweezettes led happy, carefree lives on the planet Skweez-'land, which happens to have 99 continents, all of them pink tiled.

The dreaded Pitark and his Skarks - who are not, and never have been, a late Sixties rock band - invaded Skweez'land and covered it with dark blue Skweeticide.

The Skweezettes, cute little dishmops that they are, were forced to flee to the dull planet Refuznoid. But not without vows to avenge the deed most foul.

Pitark eventually died and the Skweezettes lost no time in planting an agent provocateur back on Skweez'land. Skweek, for it is he, must colour all the continents pink and avoid the deadly Skarks. Once all the continents are cleaned, the Skweezettes will return amid great celebration.

Is it a coincidence then, that if you take Pitark, remove P, R and K, then add an S, L and N, you get an anagram of Stalin? And is it pure happenstance that the second letter of Skweez'land is the same as the



Skweez'land. . . Pink tiles and animated dishmops

second letter of Ukraine? I think we should be told...

Skweek has no arms to bear arms, so he resorts to shooting small orange blobs and hopes for the best. Bonuses appear regularly on random squares and Skweek can pick them up for better blob shooting, better speed, a teddy bear, or entrance to the next level.

The teddy bear may seem silly, but to Skweezettes four different teddy bears are a powerful good luck

Skweez'land is pretty strange as planets go - pink tiles and animated dishmops notwithstanding (not even with sitting, either) - in that the continents hang over the Infinite Void of Space.

Unlike most other Infinite Voids, which are dull and black, this particular Infinite Void is pastel blue with moving pink stripes. Just as harmful, though.

The Skarks are a pretty dim bunch, usually milling about randomly, but some make a beeline for you. Very kind of them too. Now you've something to tether your bees with.

The urge to say "And that's about it on the features front" at this juncture is almost impossibly strong, so consider it said.

that requires a PhD to remember what to do, the emphasis being more on enjoyment than memory. Still, it is quite useful to remember the various features of each level, for as far as I know the whole 99 levels have to be done in one sitting.

The two Rod, Jane and Freddy type tunes alternate each level. They go well with the game, but from a distance they begin to grate.

The game is undeniably cute, with the sort of apologetic, cartoony monsters common among its genre. Although the loading and title screens may lack polish, the rest of the game is well presented.

A few neat tricks, such as rainbow borders and multi-level sprites, are used - fairly simple to do but they add that little bit of zing.

Plus Loriciels has joined a small group of companies high in my esteem - it bothers with the bottom bit of a PAL screen. Small point, but appreciated.

Parents, don't buy this game for the kids. Be honest, buy it for yourselves. That way, you'll avoid massive family arguments over who gets the next game.

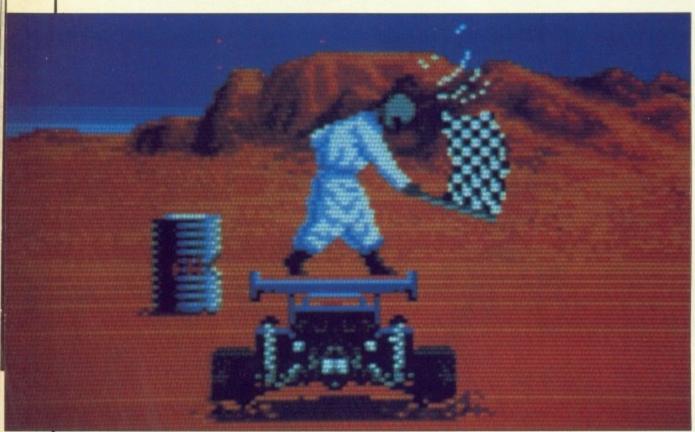
Stewart C. Russell



Skweek

# **AFRICAN RAIDERS-01**

Getting your just desserts



Where the hell did HE come from?

AR racing games always wind me up because they wont let me cheat. I mean if want to risk disqualification by cutting corners, that's my problem. So what if it isn't realistic – it's fun. At least it would be if I was allowed to do it.

African Raiders-01 (don't ask me, presumably there is an 02 planned) puts you in control of a fast four-wheel-drive desert buggy as a competitor in the African stage of the Paris to Dakar rally. You start in Tunis and have five stages to complete.

The first takes you through a rocky vista to In Salah, Algeria. As in all the stages, there is a fixed route marked with oil drums. This is the safest route. But it's a long and winding road which avoids all the hazards of the Sahara.

Keep to this well beaten track and you're more likely to arrive at your destination in one piece. You will also arrive last.

Taking short cuts is more exciting. To this end you are supplied with a map of North West Africa which has all the landmarks fairly accurately plotted. The buggy is fitted with a compass and satellite navigation equipment.

The two most common hazards are quicksand and nomadic settlements. To get rid of that sinking feeling you

can switch to four wheel drive but you're slowed from a maximum of 240 kph to a piffling 80.

Nomadic settlements are represented by hordes of camels resting behind rocks. The aim is to avoid same, although smashing into them, or anything else for that matter, on the first stage will not damage your buggy. Which is just as well because the first time you play African Raiders you are going to hit everything.

Even if you stick to the track you are inevitably going to bash the odd oil drum. Said oil drum will fly off into the distance in a very satisfactory manner.

From time to time another

competitor will appear in front of you, determined to stay there. Somehow you'll have to navigate around him without going too far off

Stage two is from Ouallene in Algeria to Achegour in Niger. Sand is the prominent feature here. Lots of it, with high sculpted dunes on the horizon. If you hit anything on this and subsequent trips your buggy will sustain damage. First your speedo will break, followed by your navigation equipment and four wheel drive.

Lost in the desert you'll almost certainly flounder about until your fuel tank runs dry. Luckily there's a hot key to let you pass on to the next stage, although you'll suffer severe time penalties for doing so.

The third stage is a race across Niger to Niamey. The scenery changes, the hazards remain the same. But there are more of them. The gameplay is accordingly more difficult.

On to the penultimate stage from Ouagadougou in the starved country of Burkina Faso to the capital of Mali, Bamako. This is the easiest level to navigate because the two towns are at the same latitude.

Set out north for one square and then turn left on to a heading of 270 degrees and you can't fail to rejoin the track just north of the finishing line. This route also happens to be inundated with hazards. Shucks, foiled again.

The final stage is an inspired dash for Dakar, pushed on by the vision in the distance of a sparkling sea between tree dotted hills.

If you study the map hard enough you'll see that each stage has an optimum route. It may look like a long haul, but because you can keep the speed up you'll get there quicker.

To cross the finishing line you have to rejoin the track at some time, where you'll be rewarded by the sight of a helmeted local waving the chequered flag at you.

African Raiders is not a difficult game, but it's best played by two one to steer, one to navigate and shout instructions. Playing on your own you'll have to pause frequently to consult the map. Unless you stick to the track. In which case you'll miss seeing the camels and oil rigs and skeletons and wrecked cars.

Instead you'll have to deal with tight bends and oil drums and wandering nomads who get very annoyed when you run them over. Either way, it's a lot of fun.

Jeff Walker



African R £19.99 Tomahaw	
Sound	
Graphics	
Gameplay	
Value	
Ove	erall – 79%



FREE! - AMEGAS - by Players

r severe

e across scenery

ain the

of them.

ly more

ge from country of Mali. level to ns are at

are and of 270

rejoin

nishing

s to be

hucks.

ed dash ision in ig sea

enough has an like a

n keep

uicker. e you e time. ov the

ng the

ifficult

two -

e and

vour

uently 1 stick

miss s and

with

wan-

very

over.

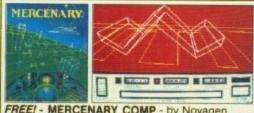
alker



FREE! - INSANITY FIGHT - by Microdeal



FREE! - ART OF CHESS - by SPA



FREE! - MERCENARY COMP - by Novagen



FREE! - BARBARIAN, ULT WARRIOR - by Palace



FREE! - TERRORPODS - by Psygnosis





REE! - BUGGY BOY - by Elite



FREE! - THUNDERCATS - by Elite





FREE! - IKARI WARRIORS - by Elite





# R PACK C Commodore



£399 NCLUDES

FREE UK

DELIVERY The Amiga 500 is one of a new breed of technologically The Amiga 500 is one of a new breed of technologically advanced computers, which are now emerging as the new standard for home computing, based around the new Motorola 68000 chip. The A500 has 512K RAM and a 1Mbyte double sided disk drive built-in. It can be connected directly to a wide range of monitors, or to a domestic TV set through a TV modulator. Designed with the user in mind, the A500 features a user friendly WIMP environment and comes supplied with a free mouse. And, when you buy your Amiga from Silica Shop, the UK's No1 Amiga specialists, you will experience an after sales service that is second to none, including a technical support helpline and free newsletters and price lists. Return the coupon below for our current information pack, which will give details of below for our current information pack, which will give details of the Silica service and the very latest Silica Amiga offers.

THE FULL STOCK RANGE: The largest range of Amiga related peripherals, accessories, books and software in the UK

AFTER SALES SUPPORT: The staff at Silica Shop are to help you to get the best from your Amiga.

FREE NEWSLETTERS: Mailed direct to your home as soon as we print them, featuring offers and latest releases.

FREE OVERNIGHT DELIVERY: On all hardware orders shipped to Silica Shop customers within the UK mainland.

PRICE MATCH PROMISE: We will normally match our competitors offers on a same product same price basis. FREE TECHNICAL HELPLINE: Full time team of Amiga technical experts to help you with your technical queries.

But don't just take our word for it. Complete and return the toupon below for our latest Amiga literature and begin to experience the Silica Shop specialist Amiga service.

**A500 Computer** £399.99 TV Modulator £24.99 **Photon Paint** £69.95 **TenStar Pack** £229.50

TOTAL RRP: £724.43 LESS DISCOUNT: £325.43

When you buy the Amiga 500 from Silica Shop, you will not only get a high power, value for money computer, we will also give you some spectacular free gifts. First of all, we are now including a TV modulator with every A500 stand alone keyboard, so you can plug your Amiga straight into your TV at home (the modulator is not included with the A500+A1084S pack as it is not required for use with monitors). Secondly, we have added a free copy of Photon Paint, an advanced graphics package with an RRP of £69.95. Last (and by no means least), so that you can be up and running straight away, we are giving away the sensational TENSTAR GAMES PACK with every A500 purchased at Silica Shop. This pack features ten top Amiga titles which have a combined RRP of nearly £230! Return the coupon for details.

# ACK

**A500 Computer** £399.99 1084S Colour Monitor £299.99 **Photon Paint** £69.95 TenStar Pack £229.50 TOTAL RRP: £999.43

LESS DISCOUNT: £350.43 PACK PRICE M: £649

When you buy your Amiga 500 from Silica Shop, we want to make sure you get the best deal possible. That is why we are giving away the TENSTAR GAMES PACK worth nearly £230, absolutely FREE with every A500 purchased from us. The TenStar Games Pack includes ten titles for the A500, each individually packaged in its own casing with instructions.

Amegas Art Of Chess Bargarian, Ult Warriors Ilvarian, Ult Warriors Ilvarian, Ult Warriors Insanity Fight Mercenary Comp Terrorpods Thundercats Wizball £14.95 £24.95 £19.95 £24.95 £24.95 £24.95 £19.95 £24.95 £24.95 £229.50

TOTAL RRP: £229.50

# SILICA SHOP:

SIDCUP (& Mail Order) 01-309 1111

1-4 The Mews, Hatherley Road, Sidcup, Kent, DA14 4DX

OPEN: MON-SAT 9am - 5.30pm LATE NIGHT: FRIDAY 9am - 7pm

LONDON 01-580 4000
52 Tottenham Court Road, London, W1P OBA
OPEN: MON-SAT 9:30am - 6:00pm LATE NIGHT: NONE

01-629 1234 ext 3914 es (1st floor), Oxford Street, London, W1A 1AB AT 9am - 6.00pm LATE NIGHT: THURSDAY 9am - 8pm LONDON

# To: Silica Shop Ltd, Dept AMCOM 09/89, 1-4 The Mews, Hatherley Road, Sidcup, Kent DA14 4DX

Mr/Mrs/Ms:

Address:

Postcode

Do you already own a computer If so, which one do you own

# MILLENNIUM 2.2

Get in shape for Armageddon

NCE I attended a lecture by a well known professor of astronomy who prophesised that hellfire and brimstone will soon be upon us. The Solar System is surrounded by a shell of material known as the Oort Cloud from which comets probably come.

Every 30 million years this cloud is perturbed by something massive. with the result that a great hail of debris rains down on the Sun. Some hits Earth, which explains the Ice Age and the extinction of the

To compound the danger there are no less than 40,000 asteroids whose orbits cross our planet's path. The learned gentleman concluded that Earth was due to be done in within the next 30,000 years and that all nations should forget such trivia as defence spending and the International Monetary Fund and instead club together to build a filthy great laser to zap any lumps of rock that come too close.

And you thought computer games were abstract and had nothing to do with real life.

According to Electric Dreams, the end of the world will be rather earlier than expected: 2,200 AD. Some people, including yourself, will have escaped to the Moon where your task will be to colonise the Solar System.

The ultimate aim is re-colonising Earth, using various pieces of equipment to extract useful material from the Moon's crust. With this you will make craft which can be sent to the asteroid belt for more materials with which to build the ships that can colonise worlds.

The main screen shows a grandiose 3D view of the planets moving around the Sun. Clicking on a planet zooms in and shows its moons. Clicking again shows whether the planet is colonised and, if it isn't, whether it is worth doing so.

There is a row of icons across the top of the screen, the most important being the Moon base. Here you start with nothing save a small stock of minerals and a little power from a generator. You begin by researching and building a larger generator. which allows you to produce more power and thus turn on your mining equipment, which allows you to dig for the raw materials which you need to produce even bigger generators, which give you enough power to



The asteroid belt is a good source of new materials

build craft that can leave the Moon's surface and report on other planets, which allows you to build life support systems...

Pretty soon, you have a beehive of activity, with all sorts of things being built and several expeditions to other planets going on at the same time. There is a save option, which is welcome, because a single game can easily take days.

Needless to say, everything doesn't

go smoothly. If you build too many generators too quickly they will explode and you will have to start again. You have Martians as enemies and will often have to defend against them. But no two games are the same, and you may well manage to get probes off the ground before threats are sent over the electronic bulletin board.

As a games reviewer you quickly learn to detect an ST port with your eyes closed and fur on your tongue. Millennium 2.2 is yet another. Basically, it is is an infinitely expanded variant of Kingdom, the golden oldie which had you balancing the books of an ancient dynasty while ensuring that the population didn't get too restless and depose you. But the good presentation and huge variety of options brings it bang up to date.

Despite the could-do-better graphics and sound, plus the extremely terse instructions, Millennium 2.2 is a surprisingly addictive game. It grows on you, provided you stick with it. It should keep you frustrated for months.

Alastair Scott



The graphics are good, but they could have been so much better on the Amiga

Millennium 2.2 £24.99 Electric Dreams Sound Graphics Gameplay Overall - 72%



SK MARKETING

COMPUTER SUPPLIES 4

10 Fulham Broadway, London SW6 1AA

COMPARE OUR PRICES BEFORE ORDERING FOR UNBEATABLE OFFERS!! Export, Government and Educational orders welcome LONDON'S LEADING AMIGA DEALER

All Prices Incl. VAT Carriage Free/Mail Order Immediate Despatch

PROFESSIONAL AMIGA SOFT	WARE
Animator/Images	£89.9
Animator	£39.9
Animator 3D	£99.9
Comic Setter	£44.9
Draw Plus	£149.9
Deluxe Paint II	£49.9!
Deluxe Paint III	£64.95
Deluxe Print 2	£39.9
Deluxe Music Construction	£54.95
Deluxe Productions	£99.9
Deluxe Photolab	£54.9
Deluxe Video	£65.95
Digiview Gold	£139.9
GFA Basic Interpreter	£49.95
Hisoft Devpac V2	£42.95
Hisoft Lattice C	£175.95
Home Accounts	£22.9!
Impact	£54.95
Instant Music	£21.95
K-Spread II	£49.95
K-Data	£34.95
K-Gadget	£19.95
K-Text	£14.95
Kind Words	£33.95
Mailshot	£21.95
Mailshot Plus	£40.95
MCC Assembler	£49.95
MCC Pascal	£67.95
Photon Paint	£49.95
Photon Paint 2	£54.95
Protext	€64.95
Publishers Choice	£74.95
Sculpt 3D	
Sonix	£39.95
Superbase Personal	£54.95
Superbase Personal II	£65.95
Superbase Professional	£169.95
Superplan	£69.94
The Works!	£109.95
Video Title	
Wordperfect	

Tube Station - District Line AMIGA HARDWARE

Personal callers welcome

Opposite Fulham Broadway

# SKM A500 PACK

- \* A500 Computer
- TV Modulator
- \* Photon Paint
- ★ 7 Star Games Plus
- \* Free Dust Cover
- ★ Free Mouse Mat

All Only £389

A500 + 1084S£62	29
TV Modulator £2	23
Philips 8833 Monitor£259.9	95
Commodore 1084S Col. Monitor £259.9	15
A501 Ram Expansion/Clock£129.9	15
Commodore A1010 3.5" Drive £89.9	19
Cumana CAS354 3.5" Drive + PSU £116.9	19
Cumana CAX1000S 5.25" Drive £125.9	19
Cumana CAS1000S 5.25" Drive	
+ PSU£134.9	19

# COMMODORE **AMIGA 2000**

will

start

gainst

same,

o get hreats

illetin

iickly

your ngue. ther. itely t, the

ncient t the s and sentations

etter the

ictive d you frus-

Scott

\* Latest B2000 Model \* 1084S Colour Stereo Monitor \* 20Mb Hard Disk

\* PC-XT Bridgeboard with Floppy ALL ONLY £1525

FRINTENS	
Micro Peripherals 135+	6149
Star LC10	
Star LC10 Colour	
Star LC24 10	£332
Star NB24 10	£539
Star NB24 15	£626
Epson LX800	£212
Epson LQ500	£340
Epson LQ850	£510
Epson LQ1050	£656
Epson FX850 (New in)	
Epson FX1050 (New in)	£478
Citizen 120D	£156
Panasonic 1081	£167
NEC P2200	£340
NEC P6 Plus	£546
NEC P7 Plus	£679
Amstrad DMP 4000	£305
Epson Laser GQ3500	£1426
Panasonic Laser	£1724
Hewlett Packard Jet 2	£1815
Panasonic 1124 (New 24 Pin)	
Panasonic P1180	

# SKM SPECIALS

80 Col Space Saving Printer	
Stand£2	8.75
Storage Box (100)£10	0.00
Mouse Mat £	5.75
Dust Cover£	6.95
Printer Dust Covers £	5.75
A4 Copy Holder H33£1	7.25
4-Way Anti Surge£1	

Advanced Amiga BASIC	£18.95
Amiga 3D Graphics Prog BASIC	£18.45
Amiga Applications	£16.95
Amiga Assembly Lang Prog	
Amiga BASIC Inside & Out	£18.95
Arniga C for Beginners	£18.45
Amiga DOS Inside & Out	
Amiga DOS Manual	£22.95
Arriga DOS Quick Reference	£13.95
Amiga DOS Ref Guide	£14.95
Amiga Disk Drives Inside & Out	
Amiga Gd Graphics Sound Teleco	£17.45
Arriga Handbook	£15.95
Amiga Hardware Ref Manual	£22.95
Amiga Intuition Ref Manual	£22.95
Amiga Machine Lang Guide	.£19.95
Arriga Machine Language	.£14.95
Arriga Microsoft Basic Prog Guide	
Amiga Prog Handbook Vol. 1	£23.95
Amiga Prog Handbook Vol. 2	
Amiga Programmers Guide	
Amiga Programmers Guide	£18.45
Amiga ROM Kernel Ref Man Exec	£22.95
Arriga ROM Kernel Ref Man Lib	£32.95
Amiga System Programmers Guide	£32.95
Arniga Tricks and Tips	
Amiga for Beginners	
Becoming an Amiga Artist	
Beginners Guide to the Arniga	
Compute's 1st Book of Amiga	
Compute's 2nd Book of Amiga	C16 05
Elementry Amiga BASIC	
Inside Amiga Graphics	
Inside the Amiga with C 2nd Ed	
Kickstart Guide to the Amiga	
Kids & the Amiga	
More Tips & Tricks for Amiga	
Programmers Guide to the Amiga	£23.95

Mercenary Compendium Mickey Mouse

	_
Atterburner	C16.50
Alien Syndrome	618.08
Alternate Reality	C15 05
Amageddon Man	C16.95
Archipelagos	C16.05
Archon II Adept	C16 DE
Arena	C22.00
Arkanoid	£19.40
Army Moves Around The World in 80 Days	CIEDE
Arrand The World in 90 form	£10.95
Abx	C14 0E
Autoduel	£16.05
Basi	C15 05
Rad Cult	C10.05
Ball Call Balance of Power Ball raider	C22 42
Baliraider	613.06
Ballietie	C16.06
Ballistix Barbarian Palace	210,95
Barbarian Psygnosis	£10.95
Basis Tale	£10.90
Bards Tale Bards Tale 2 Balman Caped Crusader	£10.85
Batman Canad Causaday	110.95
Baltle Tech	£10.00
Baltle Tech	T18.88
Balle Uness	123.00
Battle Chess Battlehawks Bermuda Project	£23.00
Bermuda Project	£15.95
Better Dead Than Alien	215.95
Beyond Zork Bio Challenge	
Bio Challenge	. £16.95
Bionic Commando	E18.95
Black Lamp	£13.95
Blas le roids	£16.95
Blood Money BMX Simulator	£19.95
BMX Simulator	£12.02
Bomburaal	
Breach	
Buggy Boy	. £18.98
Bulcher Hill	£14.95
California Games	
Capone	£19.95
Captain Blood	£15.95
Captain Fizz	£12.95
Carrier Command	£16.50
Championship Golf	. \$29.95
Chessmaster 2000	
Chrono Quest	
Circus Games	116.95
Computer Hits	£19.95
Corruption	£16.50
Crack	£13.95
Craps Academy	.216.95
Crash Garrat	£15.95
Crazy Cars	£16.95
Crazy Cars 2	.216.95

£14.95 £13.05 £16.50

Dark Castle	€19.55
Deep Space	\$19.95
Def Con 5	\$16.95
Defender of the Crown	£18.95
Deja Vu	29.812
Denaris	
DNA Warrior	
Double Dragon	213.95
Dragon Ninja	£16.50
Dragons Lair	£32.95
Dragonscape	£14.95
Oream Zone	£17.95
Dellar	CHE OF
Destroyer	£18.92
Dungeon Master	£15.95
Dungeon Master Editor	£8.63
Faples Nest	C13.95
Dungeon Master Dungeon Master Editor Eagles Nest	£18.98
Echolon	69.813
Eco	
Eliminator	\$16.95
Elite	
Emerald Mines	
Empire	£23.00
Empire	C13.95
Enlightenment	£15.05
Espionage	£14 05
Face Off	C15 95
Falcon	
Femandez Must Die	£16.50
Ferrari Formula 1	£18.95
Feud	£8.95
Final Command	£17.95
Fire & Forget	£16.95
Fire Brigade	£23.00
Firezone	\$16.95
Fish	C16.50
Right Simulator 2	£35.80
Rintstones	£14.95
Football Director 2	\$16.95
Finitstones Football Director 2 Football Manager 2 Expansion	£10.35
Football Manager 2	£14.95
Foundations Waiste	£16.95
Foundations Waiste Fright Night	£13.95
Galactic Conqueror	£15.95
Galdragons Domain	£17.95
Garfield	
Garrison	
CALLS OF THE OWNER, TH	£18.40
Garrison2	£18.40 £16.95
Garrison2	£18.40 £16.95
Garrison2	£18.40 £16.95 £16.95 £19.95
Garrison2 Gauntiet II GFL Championship Football Ghosts & Goblins	£18.40 £16.95 £16.95 £19.95
Garrison2 Gaunitet II Gaunitet II Ghosts & Goblins Goldrunner	£18.40 £16.95 £16.95 £19.95 £16.88 £16.95
Garrison2 Gauntlet II GFL Championship Football Goldrunner Goldrunner Goldrunner 2	£18.40 £16.95 £16.95 £19.95 £16.88 £16.95 £13.95
Garrison2 Gauntiet II Gauntiet II GRIC Championship Football Ghosts & Goblins Goddrunner Goldrunner 2 Golden Path	£18.40 £16.95 £16.95 £19.95 £16.88 £16.95 £13.95
Garrison2 Gauntlet II GFL Championship Football Goldrunner Goldrunner Goldrunner 2	£18.40 £16.95 £16.95 £19.95 £16.88 £16.95 £13.95

GIYZOT	FID'RD
Guild of Thieves	£16.95
Gunship	£19.95
Hardball	£16.95
Hawkoye	C13 05
Heilbent	C13.05
Helter Skeiter	£13.95
Heroes of the Lance	£13.90
Heroes of the Lance	E18.90
Highway Hawks	£18.95
Hilchhiker Hollywood Hijinx	£19.95
Hollywood Hijirix	£14.95
Hollywood Poker	£13.95
Hostages	\$16.50
Hot Shat	£13.95
Holball	\$16.95
Hot Football Hunt For Red October	£16.95
Hunt For Red October	£15.95
PRIVATES	1.10.30
Ika i Warriors	£16.95
Ika i Warriors	£17.05
I Ludrious	C15 05
I manage to the second	P4 P PA
Impossible Mission 2	C17.02
Impossible Mission 2	E17.80
Indoor Sports	110.90
Ingrids Back	£14.95
Insanity Fight	£16.95
International Soccer	£14.95
Iridon	£15.95
Jet	£30.48
Jewels of Darkness	£15.95
Jinder	£17.95
Joan of Arc	£16.95
Jump Jet	£16.95
Karate Kid 2 Kennedy Approach	£18.92
Kennedy Approach	£15.95
King of Chicago	£19.95
King Quest 3 Pack	£18.95
Knight Orc	£15.95
Kristal	£19.95
Kult	£16.95
Lancelot	£13.95
Larrie & The Ardies	£14 05
Last Duel	C13 05
Leaderboard Birdie	C16.05
Led Storm	C14 OF
Led Storm	C14.80
Legend of the Sound	210.95
Leisure Suit Larry	£17.85
Leisure Suit Larry 2	119.95
Levialhan	£14.95
Live & Let Die	E14.95
Lombard RAC Rally	£16.50
Manhatlan Dealers	£16.95
Manhunter	£19.95
Maria Whittakers Xmas Box	211.95
Manhunter	EIW MD
Mana Whitakers Xmas Box Mean 18 Golf Menace	EIW MD

Microprose Soccer Mike the Magic Dragon Milenium 2.2 Mindfighter	12	6	.95
Mike the Magic Dragon	13	3	.95
Milenium 2.2	12	9	95
Mindfighter	21	6	50
Mini Galf	£	9	95
Motor Massacre	ē	3	OF
Mauroma	P4	7	DE
Nebulus A New Beginning Nigel Mansell Grand Prix Night Mansell Grand Prix	ě.	á	04
A Mary Danisains	ă.	2	90
A new beginning	ä	2	95
Nigel Mansell Grand PTIX	4	p	WO
Nightraider	4	ч	.95
No Excuses	E	6	.96
Obliterator 4 x 4 Off Road Racing	8	8	92
4 x 4 Off Road Racing	3	9	95
Unshore warnor	ы	ю	ъι,
Operation Wolf	2	6	50
Operation Neptune	21	8	98
Outrun	e	ō	Q.
Overlander			
Decembrie	6	-	0.0
Pacmania	ц	5	MC
Pac Land	В	3	95
Pandora	21	3	.96
Parm	12	5	96
Peter Beardsley Soccer	21	4	96
Phantasm	Ē	7	95
Pinball Wizard	ē	3	06
Pink Panther		3	06
Pioneer Plague		2	-
Proneer rhague	н	D	50
Platoon			
Dt. and and Manufe	H	Ď	21
Plundered Hearts	È	0	13
Platoon Plundered Hearts Police Quest	ш	и	.MG
Populous	£	8	95
Populous	13	8 8 8	95
Populous	13	9994	95
Populous	13	9994	95
Populous POW Power Struggle Precious Metal President is Missing	1212121212121	999496	95 95 95 95 95
Populous POW Power Struggle Precious Metal President is Missing	1212121212121	999496	95 95 95 95 95
Populous Power Struggle Precious Metal President is Missing Prison	12	9994966	95 95 95 95 95 95
Power Struggle Precious Metal President is Missing Prison Purse Saturn Day		99949666	95 95 95 95 95 95
Power Struggle Precious Metal President is Missing Prison Purse Saturn Day		99949666	95 95 95 95 95 95
Populous POW POW Power Struggle Precious Metal President is Missing Prison Purple Saturn Day O Ball Ousdrallen	100000000000000000000000000000000000000	9994966636	95 95 95 95 95 50 95 50
Populous POW Power Struggle Precious Metal President is Missing Prison Purple Saturn Day Q Ball Quadrallen Question of Sport		99949666367	95 95 95 95 95 95 95 95
Power Struggle Precious Metal President is Missing Prison Purple Batum Day O Ball Quadralien Question of Sport		999496663674	.95 .95 .95 .95 .95 .95 .95 .95 .95 .95
Populous POW Power Struggle Precious Metal President is Missing Prison Purple Batum Day O Ball Quadralien Question of Sport Ouizan Rambo 3		9994966636745	95 95 95 95 95 95 95 95 95 95 95
Populous POW Power Struggle Precious Metal President is Missing Prison Purple Saturn Day O Ball Ouadrailen Ouestion of Sport Ouizan Rambo 3		99949666367450	95 95 95 95 95 95 95 95 95 95
Populous POW Power Struggle Precious Metal President is Missing Prison Purple Saturn Day O Ball Ouadrailen Ouestion of Sport Ouizan Rambo 3		99949666367450	95 95 95 95 95 95 95 95 95 95
Populous POW Power Struggle Precious Metal President is Missing Prison Purple Saturn Day O Ball Ouadrailen Ouestion of Sport Ouizan Rambo 3		99949666367450	95 95 95 95 95 95 95 95 95 95
Populous POW Struggle Precious Metal President is Missing Prison Purple Batum Day O Ball Quadrallen Question of Sport Ouizan Rambo 3 Reach for the Stars Realm of Trolls Rebet Charge at Chikarmanas		9994966636745864	95 95 95 95 95 95 95 95 95 95 95 95
Populous POW Struggle Precious Metal President is Missing Prison Purple Batum Day O Ball Quadrallen Question of Sport Ouizan Rambo 3 Reach for the Stars Realm of Trolls Rebet Charge at Chikarmanas		9994966636745864	95 95 95 95 95 95 95 95 95 95 95 95
Populous POW Power Struggle Precious Metal President is Missing Prison Purple Batum Day O Ball Question of Sport Quizan Rambo 3 Reach for the Stars Realm of Troils Rebel Charge at Chikarmanga Return to Stants Reburn to Stants		99496663674586430	95 95 95 95 50 95 95 95 95 95 95
Populous POW Stuggle Precious Metal President is Missing Prison Purple Batum Day O Ball Quadrallen Question of Sport Quizan Rambo 3 Reach for the Stars Realm of Trolls Rebet Charge at Chikarmanga Return to Atlantis Return to Atlantis Return to Atlantis		994966636745864306	95 95 95 95 95 95 95 95 95 95 95 95 95 9
Populous POW Power Struggle Precious Metal President is Missing Prison Purple Saturn Day O Ball Ousdralien Ousdralien Oustron of Sport Ouizan Rambo 3 Reach for the Stars Realm of Trolls Rebell Charge at Chikarmanga Return to Atlantis Return to Atlantis Return of the Jedi Reingside		9949666367458643066	95 95 95 95 95 95 95 95 95 95 95 95 95
Populous POW Power Struggie Precious Metal President is Missing Prison Purple Batum Day O Ball Ousdralien Ousdralien Ousdralien Guestion of Sport Outzan Rambo 3 Reach for the Stars Realm of Trolls Rebel Charge at Chikarmanga Return to Rambis Return of the Jedi Ringside Ringside Rious Blasters		99496663674586430667	95 95 95 95 95 95 95 95 95 95 95 95 95 9
Populous POW Power Struggle Precious Metal President is Missing Prison Purple Saturn Day O Ball Ouedralien Ouestion of Sport Ouizan Rambo 3 Reach for the Stars Realm of Trolls Rebel Charge at Chikarmanga Return to Atlantis Return of the Jedi Ringside Road Blasters Roadways		994966636745864306676	95 95 95 95 95 95 95 95 95 95 95 95 95
Populous POW Struggle Precious Metal President is Missing Prison Purple Batum Day O Ball Ousdrailen Ousston of Sport Outzan Rambo 3 Reach for the Stars Realm of Troils Rebel Charge at Chikarmanga Retumbo Genesis Retum of the Jedi Ringside Road Blasters Road Wars Robocoe		9949666367458643066755	95 95 95 95 95 95 95 95 95 95 95 95 95 9
Populous POW Populous POW Power Struggle Precious Metal President is Missing Prison Purple Batum Day O Ball Quadralien Question of Sport Quizan Rambo 3 Reach for the Stars Realm of Trolls Rebet Charge at Chikarmanga Return to Atlantis Return to Atlantis Return to He Jedi Ringside Road Blasters Roadwars Roadwars Rodocop Rocket Banner		99496663674586430667558	95 95 95 95 95 95 95 95 95 95 95 95 95 9
Populous POW Power Struggle Precious Metal President is Missing Prison Purple Saturn Day O Ball Ouedralien Ouestion of Sport Ouizan Rambo 3 Reach for the Stars Realm of Trolls Rebel Charge at Chikarmanga Return to Atlantis Return of the Jedi Ringside Road Blasters Roadways		99496663674586430667558	95 95 95 95 95 95 95 95 95 95 95 95 95 9

Roger Rabbit	£19.95	Terrorpods	£18.98
Rolling Thunder	C18 05	Test Drive	£19.95
Romantic Encounters	£16.50	Tetris	£13.95
R-Type	£17.95	Thexder	£17.95
R-Type	£19.95	Three Slooges	\$21.95
Running Man	£16.95	Thunderblade	£19.95
Sargon III Chess	£13.95	Thundercats	\$16.95
Savage	£19.95	Tiger Road	£17.95
Bcorpio	£16.50	Time & Macik	£13.05
Scorpion	\$16.95	Time Bandits	C13.05
Scrabble Deluxe	£13.95	Times of Lore	€15.95
8DI	£19.95	Timescanner	\$19.95
Seven Cities of Gold	£16.95	Tracers	£18.98
Strike Force Harrier	\$18.98	Tracksuit Manager	£14.95
Shadowgate	\$16.50	Trained Assassin	£16.95
Sherlock Riddle	£16.95	Triad	£22.95
Shogun Shoot em up Construction Set	£19.95	Trivial Pursuits	£15.95
Shoot em up Construction Set:	£16.95	Turbo Cup	£14.95
Side Arms	£16.95	Turbo Cup	£19.95
Silent Service	\$16.95	Ultima 3 Ultima 4	£16.95
Sinbad	219.95	Ultima 4	\$18.95
Skateball	£17.95	Universal Military Simulator	£16.95
Skyfox		Uninvited	£18.95
Sky Fox 2	£18.95	Vampire Empire	£13.95
Slip Stream		Vectorball	£13.95
Sorcery Plus	£17.19	Verminator	£15.95
Space Quest 2	£17.95	Victory Road	
Space Quest 1		Virus	£18.95
Space Ball	£16.95	Visien	£19.95
Speed Ball	£16.50	Voyager Wanted	£19.95
Spitting Image	£13.95	Wanted	£14.95
Starfleet		War in Middle Earth	£13.95
Star Glider	£15.95	Warlocks Quest	£13.95
Star Glider 2	£16.50	Waterloo	
Star Goose	£19.95	Whirlgig	\$13.95
Star Ray	216.95	Willow	£19.95
Star Wars		Winter Olympiad	213.95
Steve Davis Snooker		Wizard Wars	\$21.95
Str Crary		Wizball	£16.50
Street Fighter		World Class Leaderboard	£17.95
Strip Poker 2	£16.95	World Tour Golf	
Summer Olympiad	£13.95	Xenon	£16.95
Super Hang On	£19.95	Zak Mc Craken	
Sword of Sodan		Zany Golf	
Techno Cop		Zork 2	
Teenage Queen	£13.95	Zynaps	\$16.95

Zoetrop (5 in 1 package) ..

01-381 6618

(24 Hours) Callers Welcome Fax No. 01 381 0528



ALL PRICES INCLUDE VAT/CARRIAGE FREE All prices are subject to change without further notice. All goods subject to availability

VISA

THIS is possibly the world's longest delayed game. Previewed shortly after Army Moves and before Game Over, it promised fabbo graphics and Dinamic gameplay – sometimes frustrating, but ultimately

rewarding.

Behind the facade of perestroika, them Rooshians have been building a submarine of such hugeness that it alone would be capable of holding the Free West to ransom.

# **NAVY MOVES**

Sub standard shoot-'em-up

This just isn't cricket, so you, as the predictably skilled aquatic assault commando, have to get aboard the sub, kick some Red ass and blow the thing out of the water.

You have plans of the sub and you can have a good laugh at repressed Commie ineptitude. The sub's main weapons are radar guided nuclear torpedoes. Yet, curiously, there are no torpedo tubes.

Using radar from a sub is similar to raising a pink, mile-high hoarding above the ship, saying: "Yes! It's a submarine!". A bit of a giveaway, to say the least. Not as much as the lack of a rudder, or the designers being St. Stanislav's Institute. And what did that Marx chap say was the opiate of the masses?

The area around the sub's base is littered with mines, which blow your little boat skywards and cause a typical Dinamic go-all-the-way-back-to-the-beginning.

After that it's a confrontation with Reds on jet-skis. Once past them it's a quick swim down to the underwater entrance to the sub base, braving hungry sharks. They're not Pinkos, by the way – they just know a good

meal when they see one.

Once into the base you must steal the assault bathyscaphe – the only means of getting to the sub. In the bathyscaphe, giant octopi and sea monsters are rather keen on Tinned Person and will do anything to sample that particular delicacy. Once past these delightful beasts you are given an entry code for part two of the game. Glad to see that the old Dinamic values still hold.

The second phase takes place in the sub. You must halt the sub, enter the reactor bay, plant a small bomb, transmit an arming code and then get out very, very rapidly.

You need to cajole – at gunpoint – members of the crew to do things for you, such as shut down the engines, open the reactor bay doors and do the final transmission.

To make your day pleasurable, marines will shoot at you – a service extended to only the most favoured customers.

Navy Moves boasts possibly the most teeth-grindingly irritating tune, which seems to be composed of three sampled riffs repeated as often as is electronically possible. It plays very

# PHOBIA

Phobia
£19.95
Imageworks

Sound

in between into a realisation of Dante's worst nightmares,

The game takes the form of a sort of teensy weensy at the sort of the sort of the sort of teensy weensy at the sort of t

Gameplay Value

Overall - 76%

TELL me about your childhood.
Did you tease your mother? Did
you tease your cat? Did your cat tease
you? The answers to these and other
questions will probably not be
answered by playing Phobia.

But if you have any deep-seated illogical fears about ice cubes or spiders, be prepared to have them exposed before your peers.

Here is the plot: A bad guy has kidnapped someone important and is holding him for ransom on the surface of the Sun. In order to prevent anyone (you) from liberating them he has converted all the planets

in between into a realisation of Dante's worst nightmares, populating them with the kind of things people are most scared of.

All the big phobias are represented, although my personal phobia, baldygitophobia, doesn't The game takes the form of a sort of Scramble affair, piloting your craft through a scrolling landscape of the fears of your choice. On the Arachland planet you come across lots of spiders weaving killer webs and

shooting at you. Believe me, if a teensy weensy garden spider scaqres you, then a 100 ft high mutated monster spitting molten death at you will send you catatonic.

As custom dictates, at the end of every level there is an even more horrendously mutated beast to eradicate. Little Miss Muffet watch out.

The thing that impresses me most is that all the different planets are not the same with new sprites loaded in, but vary considerably in their structure.

This makes it a thrill to progress to each new level and seek out strange new life forms.

People who were scared by Hitchcock's The Birds should steer clear of Ornitholand, as it is very reminiscent of the great man's masterpiece. It's funny, too – all the birds line up on telegraph wires to take shots at you.

As certain baddies are despatched to their resting grounds they leave behind them power-ups which,



# Navy Moves £24.95 Dinamic Sound Graphics Graphics Gameplay | | | | | | | | Overall - 19%

quietly through one speaker while playing the game, so there's no escaping it.

are

o of

n get

s for

ines.

rvice

three

as is

very

tyou

nd of

more

eradi-

most

e not

ed in.

struc-

ess to

range

Hitch-

lear of

iscent

e. It's

up on

t you.

atched

leave hich.

ut.

The graphics in the first stage are very small and rather free from the ravages of detail. But then I've only seen the very first part of the first

The truth is that even to an inordinately skilled gameplayer such as myself. Navy Moves is completely impossible. And because you go back to the start every time you die, it remains completely impossible.

The later stages, as far as I'm concerned - and probably you too - just do not exist. What a waste of time, money, talent, effort, packaging, trees (for the documentation) and plenty of other things which, off hand, don't spring to mind.

Stewart C. Russell

# LICENCE TO KILL

Can you make the trip?



T seems only logical that the long-Lest running series of films should create the longest running series of spin-off games. But whereas the films have generally deteriorated since Connery left - never mind Moore - it is interesting to note that the games have been getting better.

LTK boots up with a slightly impure rendering of the familiar Bond theme and a terrible digitised picture of Timothy Dalton. Terrible because it is quite lifelike.

Bond begins in a helicopter with Felix, the CIA agent, chasing the notorious drug baron Sanchez who is aboard a jeep. The object is to strafe the jeep and kill Sanchez. Fair enough. Things to watch out for are the occasional gun emplacement taking a shot at you, and telegraph

If he survives to the end, James must jump out of the helicopter and pursue Sanchez on foot through a camp of enemy gunmen. This is easily the best part. It bears a resemblance to games like Commando, but is much more realistic - armed with a 15 shot per magazine Beretta, accuracy and fleetness of foot become more important than gung-ho doggedness.

Pressing the Fire button activates an aiming reticle and releasing it fires the shot. So Bond can fire in a different direction to that in which he is travelling. This can be a little difficult at times and unless you are good you will be full of holes before you have the bad guy in your sights.

Bond makes his way back to the chopper and pursues Sanchez's light aircraft. Here he must dangle out of a helicopter and attach a tow- rope to the plane before patriotically parachuting into the water below.

Now armed only with a knife, it's not enough just to stand and stare. He must dodge enemy patrols and board a seaplane by harpooning its floats. Simply climbing on board is not the Bond way.

The final stage involves jumping

on to the roof of a 16 wheeler and wreaking havoc on the highway in an attempt to catch Sanchez's elusive missile-firing jeep. I'm convinced it's a major contribution to road safety.

Graphics throughout are pleasing. especially the animated end sequences to each stage which give you the feel that you are playing a complete game rather then just several little ones tagged together, like the earlier efforts in the series.

The sound effects are minimal so turn the volume down and jack up Gladys Knight on your turntable.

It is easy to say that with Domark's monopoly on the Bond series, it doesn't so much have a licence to kill but a licence to make a killing.

To be fair, Domark now seems to be relying not so much on hype but more on decent coding to sell its wares. Gameplay has improved to the point where the nostalgic among you may mentally intone "I think he got the point" in a fake Scottish accent as a baddie gets harpooned.

A definite improvement on earlier tragedies.

Green



oddly enough, increase the power and death-dealing efficiency of your weapons. If you go on a mercy mission to an infested moon, you can pick up small orbs enabling you to run the gauntlet of the spaceways between planets. They also give you extra firepower, lending the game a sort of R-Type look.

Gameplay is strong and fierce; autofire is definitely recommended.



Phobia is structured to have a large strategy element to it. You can choose your own route through the solar system, thus avoiding any planet you feel too loathsome, but watch out for the evil armies of Phobos approaching from the other direction, seeking to cut off your route.

One of the stranger options is the hi-res mode. Yes, it does turn the interlace mode on giving extra high definition graphics, but it also cuts the play area to a minute fraction of the screen so you can't see what is going on.

The only possible criticism of the game is that it is terribly difficult. For experts like myself there is a "silly mode" which makes it even more impossible.

Overall, a game that strikes a rare balance between playability and impossibility, providing entertainment which gives it a long lifespan. Real value for money.

Green

OMMODORE 64s are best programmed by using assembly language to poke hardware registers. The Amiga is not a C64, and the best way of programming it is by going through the operating system, *not* by breaking the rules and "hitting the metal".

The Amiga has an exceptionally well designed operating system. I don't mean AmigaDos here, which is the file system and process manager written by Metacomco, a fairly small part of the overall system which no one is very happy with.

By operating system – OS for short – I mean the libraries and devices AmigaDos rests on, right down to Exec – a very fast, very tight and in my opinion very beautiful bit of assembly code which controls management and task switching.

The lower you go in the OS, the cleaner things become. This is in stark contrast to nearly all other systems, which are designed like Blackpool – all shining lights along the front, lots of propped-up grunge behind.

Going lower in the OS can be taken to an extreme, to the hardware level. Having started with an Intuition screen, you can go lower to the graphics library, lower still to direct memory access (DMA) to the screen, and even lower to direct hardware access to things like the blitter, provided you ask the OS first and give it back when you've finished. Going to the hardware by way of the OS gives no performance disadvantage over throwing it away.

The ultimate cads are the programmers who can't keep to the rules in the hardware manual, the ones who say things like: "Oooo, I can make my disc go faster than this – what a wonderful copy protection scheme I can implement". This goes past bad manners into the world of outright idiocy, because you can't rely on all machines being exactly the same.

Why are there still programs – not all of them games – which don't take advantage of the OS? And why are there still silly kids who think that breaking the rules is somehow macho? The three most commonly heard answers are performance, memory and portability.

The performance argument is largely rubbish. You can go as low as you like in an OS-legal manner, you don't gain anything by throwing it

away. It can be argued that killing
Exec loses the overhead of task
switching, but as I discovered doing
timing experiments for the BBC
Emulator, this is only a few per cent.
If task switching is really a problem,
you can turn it off for as long as you
like without breaking the rules.

The memory argument is better.

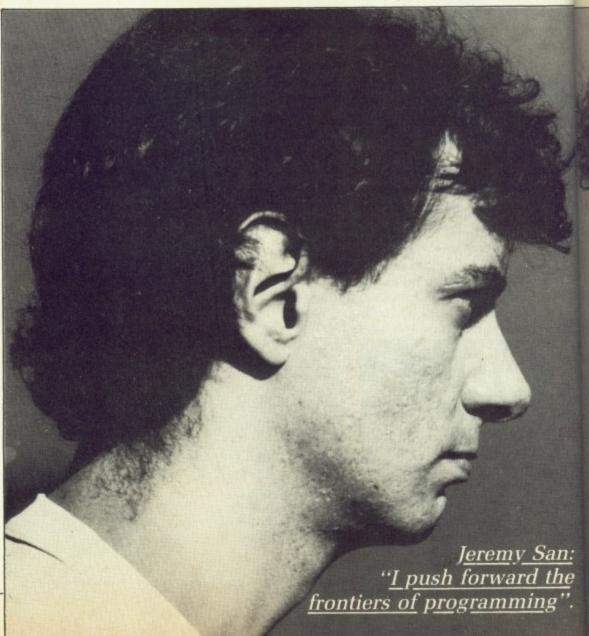
The operating system does take up a lot of ram and there may be cases where complex games need to fit into an unexpanded Amiga.

There are two arguments against doing this. By ditching the OS you are throwing away 256k of rom code, much of which is very tightly written. Does it make sense to write your own text routines for high score tables or serial port routines for the user-touser option?

The second argument is that AmigaDos supports an overlay structure – you don't have to have all your program in memory at once. Multi-tasking means you don't even need to slow action for disc access.

Portability is the best argument of the three. If you rely on the Amiga's operating system you are going to have trouble porting to a more primitive machine. From this angle it makes sense to ditch the OS. Not the way to get the best out of the Amiga, but it may be the best way to make money.

Whatever it takes to get results is the best way to program the Amiga.



There is no point in poking the registers if the program could have been written without such cad-like practices, but it is not always possible to write fast arcade games which are also system friendly.

Listen not to those who cite Exec as an example of what the Amiga rom is like. Exec is beautiful, but provides no features a game programmer would want. And it's only 8k, hardly a dent in the 256k KickStart rom.

I don't believe in religious programming practices, I believe in innovation and originality. You don't get that if you follow what some have done and others will tell you to do. I certainly don't agree with windbag preachers who have never tried to

write an arcade game and who are convinced that it would be as good, or as fast, were it written using the

When I break the rules, it is the operating system rules only. I never condone hardware rule-breaking. That's for prats.

Games have to be targeted at the games-playing public. These folk don't have hard discs, extra memory and turbo speed-up boards. Pride means I cater for them, but I have to optimise my code so it runs perfectly well in 512k with one drive.

AmigaDos is not memory efficient. Exec takes up 42k with system variables and 16k for each drive connected, Workbench takes up 32k

for its screen and then eats more for windows. What I really need is a GiveMeMoreMemory OS call which would ask the machine to go to sleep while I took advantage of all the resources. When my game finished I would call the OS routine WakeUpI'veFinished and it could have all its memory back again.

A 512k ST has more memory free without having to take over the OS, so a ported game won't fit into the Amiga's 400k. If they cut bits out of the game to fit it in, loud-mouthed ST users would claim their machine was superior because Amiga games have to be chopped up before they fit into the machine.

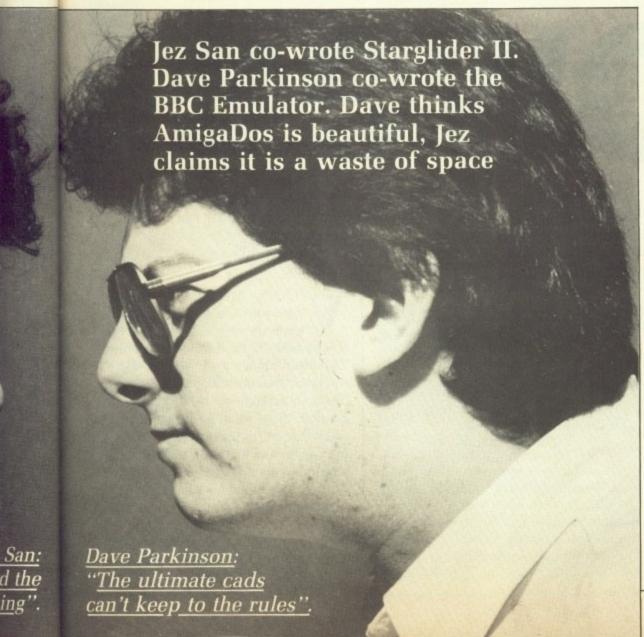
O apart from memory space, why do programmers take over the machine? It's mainly for speed. Games are only enjoyable when they respond quickly, sluggish controls make for unplayable, jerky games.

The Amiga OS is designed to be very useful to the largest cross section of the Amiga programming community. As a result it is a compromise. There's C there, so it's not fast enough for realtime 3D flight simulators or superfast shoot-'em-ups. Lets face it, the arcade playing public wants fast arcade games. They don't need to be legitimate, just fast - faster than the OS can provide.

It is possible to write custom text and graphics on the Amiga and not break the rules. I use routines such as these for ArgAsm - the Argonaut Assembler - to get them relatively fast, but they are still legal. Preachers will tell you anything you want to do can be done legitimately by going lower in the Amiga OS. That's a lie. You can't go low level, you can just go relatively low.

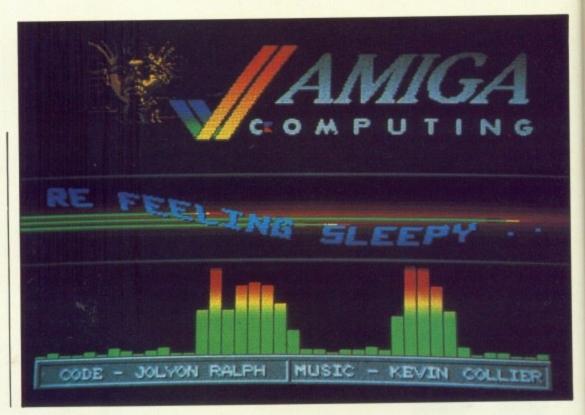
The exceptions are the blitter's OwnBlit and DisOwnBlit functions, only a fraction of one of the chips. What about the copper, audio, timers or any of the other custom chippery?

Audio DMA is an area where the Amiga OS does not provide enough support. Games want to mould samples in realtime. All the Audio.Device can do is repetitively play memory hungry samples. Legitimate programmers have no way of reinstating values in write-only or read-and-forget registers. I do, and by breaking the OS rules I push forward the frontiers of creative programming.



OTS of articles and books have been published on Amiga 68000 programming but many readers wanting to learn how to write arcade games or other graphics-intensive software to use the Amiga's custom hardware properly have been disappointed.

Accessing the hardware directly is less confusing than using the built-in library routines. If you have programmed on the C64 or another 8 bit computer, you may be a little put off by all the Libraries, Rastports, Viewports, TmpRastPtrs and BltitMapRastPorts.



# If you've run the demo on our cover disc this month you'll want to know how it's done. Jolyon Ralph, its author, begins a series of articles on advanced machine code by showing you how to use copper lists

But the good news is that if you program the hardware directly it is only slightly more complex than programming your trusty old 8 bit machine. It has the advantage that you are using 68000 machine code, which has to be the easiest to use of any processor.

The other major advantage is speed. If you want to write a game using library routines, forget it. They have two speeds – dead slow and stop. Library routines are fine if you're writing the latest accounts package where graphics are not important, but not for anything that needs speed.

One of the most confusing aspects of the Amiga to programmers who are new to 16 bit machines is the way that nothing in memory seems to be fixed. On old 8 bit machines you had a fixed screen address, fixed Basic program area and so on, but on the Amiga you open the techy books and what do you see? Nothing is fixed except this one magical thing called EXECBASE.

Well that is not strictly true. The

IF you want to study the source code for Jolyon's Zowee! demo, you'll find it in a file in the DEMO-SOURCE directory under the filename SOURCE.ARC. The ARC program is in the same directory. To un-ARC the files use:

ARC -X SOURCE

There is a READ.ME file in the archive which describes the contents. You will be able to load this, and the source code, into any text editor or wordprocessor.

rom is fixed in memory, but don't call rom routines directly from your programs because the addresses change with different versions of Kickstart.

AST portions of the Amiga's memory map are assigned to things called CIAs and custom chips. This has nothing to do with shady US operations in Central America or designer takeaways, but quite a lot to do with the myriad of extra chips that were thrown in the Amiga to ease the burden on the 68000 in its efforts to communicate with the outside world.

The CIA chips look after everything from reading the mouse to controlling the disc drives. The custom chips – Paula, Fat Agnes and Denise – handle all the sound output, video display and graphics manipulation (the well-

famed Blitter).

The area allocated to these chips is neither ram nor rom; the address lines are connected directly to the chips. This can be confusing because a lot of the registers contained in the custom chip area are Write Only - you can write a value to it but you can't read it back.

The custom chip memory consists of about 200 hardware registers. Most of these can either be set (Write Only) or read (Read Only), and it is by using these hardware registers that you can set up a screen, scroll it with the blitter, move some sprites and play some sound in the background.

hese registers start at memory address \$dff000. They are all two bytes long and therefore start on even addresses. Some are relatively simple to understand. For example, \$dff180 is the hardware register where the background colour is stored. Some are more complex, needing separate bits to be set or cleared for an action to take place.

You can write to these registers with the 68000 or even from Basic using POKEW, but the best way to write to them is by using one of the Amiga's special co-processors, the

This co-processor runs a program called a copper list, which is written in copper code. Original, eh? Don't worry about having to learn yet another language, copper code only has three instructions, and one of them is hardly ever used.

t call

's

to

ips.

y US

ot to

that

e the

to

orld.

hing

lling

ndle

rell-

The first copper instruction is CMOVE. All it does is move a value into one of the hardware registers. For example, CMOVE (\$180,\$888) would move the hex value \$888 into the hardware register at \$dff180. This would turn the screen grey.

The second instruction, CWAIT, is much more interesting. It waits for the video beam to reach a particular position on the screen before executing the next copper instruction. This has the format CWAIT (positionword, mask-word).

The position-word consists of two bytes. The first is the vertical wait position, the second is the horizontal

This sets up the screen as a lo-res zero-bitplane screen, in other words, no screen at all. Otherwise you will get lots of weird rubbish all over it.
Move \$0 into \$dff180. This turns the screen black.
Wait for the start of scan line \$b0. NOTE: The scanline starts at a horizontal position of \$09, not at \$01 as most books tell you.
Move \$f00 into \$dff180. This turns the background colour black.
This is an impossible wait position and is used as the CopperList END statement.



This copper list will turn the top half of screen black and the bottom half red.

```
** Must be run in chip memory.
** Use SECTION COPTEST, CODE_C in Devpac 2.
OpenLib equ -552
                      ; Offset for OpenLibrary.
CloseLib equ -414
                     ; Offset for CloseLibrary.
                     ; Get EXECBASE (Starting point for all
MOVE.L 4.w, a6
                      ; amiga library routines).
LEA GFXNAME(PC),a1
                     ; Point to "graphics.library" string.
MOVEQ #0,d0
                     ; Do not check version number.
                     ; Open the library.
JSR OpenLib(a6)
MOVE.L dØ,a1
                      ; Store library address so we can close it.
MOVE.L 38(a1),0LD
                     ; OLD now contains workbench copper list
                       address.
MOVE.L 4.w, a6
                     ; Get EXECBASE (again).
JSR CloseLib(a6)
                     ; Close the library.
MOVE.L #NEW,$dff080
                    ; Put the start address of our
                       new copper list into hardware
                      ; register COP1LC ($dff080).
BTST #6, $bfe001
                     ; This is a test for the left mouse button.
BNE LOOP
                      ; It will continue looping until pressed.
MOVE.L OLD,$dff080
                     ; Restore old copper list.
RTS
                      : Return to workbench.
NEW:
                     ; This is our copper list
DC.W $100,$0200
                     ; Data for CMOVE($100,$0200).
DC.W $180,$0
                     ; Data for CMOVE($180,$0).
DC.W $6009,$fffe
                     ; Data for CWAIT($b009,$fffe).
DC.W $180,$f00
                     ; Data for CMOVE($180,$f00).
DC.W $ffff,$fffe
                     ; Data for CEND (CWAIT forever).
OLD: DC.L Ø
                     ; Space for old copper list address.
GFXNAME: DC.B "graphics.library",0
                     ; End of listing.
```

Setting up a simple copper list

wait position. This word must always be odd to identify it as a CWAIT instruction.

The mask-word defines the accuracy of the CWAIT instruction. In general use it will almost always be set to \$fffe. This word has to be even.

A copper list has to be arranged with its CWAITs in the correct order because it can't wait for a position higher than the beam has already reached.

The third copper instruction, which I have never seen used anywhere, is CSKIP. This is implemented in the same way as a CWAIT instruction

except that it will skip over the next copper instruction if the beam position is greater or equal to the specified position.

When you're writing a copper list you store it as hex data in DC.W statements - CMOVE, CWAIT and CSKIP are not 68000 opcodes, they are co-processor instructions. See the NEW: label in the listing above for an example of how it's done.

Now you know how the Amiga can have several screens of different resolutions and colour palettes open

September 1989 AMIGA COMPUTING 39

at the same time. It sets up the first screen, uses the copper CWAIT instruction to wait until the scanline has reached the next screen, sets that screen up, waits for the next screen, sets that up... It's all done with the copper.

Look at the the simple copper list in Figure I. It turns the background colour black, waits until the middle of the screen, and then turns the background colour red.

To get your copper list running, stick it somewhere in chip memory and put the address into a hardware register called COP1LC (\$dff080). You should then see your Workbench screen disappear to be replaced by your own copper list.

Great, a nice black and red screen. But how do I get back to my Workbench? Well, when you've set up your copper list Workbench will still be running, but you won't be able to see a thing. This is because Workbench has its own copper list which sets up its own screen. When you write your copper list address

into COP1LC you write over the value that Workbench initialised it to.

Unfortunately this initial value changes depending on what size memory you have, how many drives you have, whether there's an R in the month... Remember, almost nothing in the Amiga is fixed. And don't forget that you're writing to a hardware register so you can't read the value from it first.

OU would think that the Amiga designers would have saved this address in some easily accessible place so you could restore normality with some ease after running your program. Oh no, they hid the value in the middle of a long and complex structure that you have to open the graphics library to find.

Don't worry if you can't understand how it works, the structure was written to be simple for C programmers. Or was that written in C by simple programmers?

Study Listing I, which it sets up a

simple copper list and waits for you to press the left mouse button. Then it restores the old copper list and returns you to your assembler.

Try experimenting with different values for CMOVE and CWAIT in the copper list table. Change the \$b009 value in the CWAIT instruction to \$9009, for example, and see what happens. A German flag should be quite easy to create. Lots of games use the copper to create good sky effects.

The cover demo this month uses the copper extensively. The list is five pages long. It sets up four separate screen areas - one for the logo, one for the scroller, one for the spectrum analyser and another for the name panel at the bottom.

The copper is used to create the blue stripes behind the logo, the red bar the scroller goes over, the two grey bars and the different colours inside the analyser. The Amiga Computing logo is moved from side to side by altering values in the copper list.

Next month: Setting up a screen.

## DISCOUNT SOFTWARE

## FROM MJC SUPPLIES

## WORD PROCESSING

## PROTEXT V4.2

This must be the most powerful word processor available for the Amiga. Excellent speed and wide range of fea-tures make it the only WP to buy. In-cludes Mail Merge and Spell Checking. RRP £99.95 ..............Our Price £64.95 Useable demo disc available - £7.00

## **FILER AND OFFICE**

Two utilities for Protext only. Filer is a data manager ideally suited to Mailing List applications for use with Protext's mail-merge routines. OFFICE gives all the features of Filer but adds calculations ideal for invoices. tions ideal for invoices.

FILER RRP £24.95 ..... OURS £17.95 OFFICE RRP £34.95 ... OURS £24.95

Also available: Kind Words 2 39.95 Micro Text.

## **SPREADSHEETS**

Digicalc	26.95
K-Spread II	49.95
	20.95
	28.95

## DATABASES

Micro Base	15.95
Omega File	18.95
K-Data	32.95

## PRINTERS

All printers listed have a ten-inch (A4) carriage, are Epson compatible and accept cut sheet or continuous paper. The relevant printer cable is also included free of charge. Delivery is 7-10 days from date of cheque/credit card clear-ance. For next day (after clearance) delivery

## CITIZEN 120-D

Cheap Epson FX-80 compatible giving a range of text sizes and effects in draft mode, limited sizes and effects in NLQ.

## £139.95

## PANASONIC KXP-1081

Good print and build quality, very reliable. Offers all the draft mode sizes and effects of the FX-80 compatibles in NLQ as well. Best

## £159.95

## STAR LC-10

As well built and reliable as the Panasonic. Four different typefaces all available in the full range of sizes and effects. Well worth the little

## £174.95

## STAR LC-10 COLOUR

All the features of the LC-10 but with the addition of 7 colours in several shades. Uses the Epson JX-80 printer driver from Work-bench or your graphics program. £214.95

## STAR LC-24/10

24 pin version of the LC-10. Has 5 typefaces, all usual sizes and effects, two extra effects (Outline and Shadow) and excellent print

## **EDUCATIONAL**

Each Fun School has 8 educational games
per disc.
Fun School 2 (2-6 years)13.95
Fun School 2 (6-8 years)13.95
Fun School 2 (8-12 years) 13.95
The "Discover" range have 6 games per disc
Discover Alphabet (6+ yrs) 15.95
Discover Numbers(6+ yrs) 15.95
Discover Maths (10+ yrs) 15.95

## **OUR TOP TEN GAMES**

prior
17.95
16.95
16.95
13.95
16.95
14.95
19.95
19.95
14.95

## GRAPHICS

Thunderbirds

Digi Paint	41.95
Photon Paint	49.95
Photon Paint II	68.95
Deluxe Paint II	54.95
Deluxe Paint III	.59.95

## SOUND AMAS-Sampler & Interface

## **COLOUR MONITOR**

## PHILIPS CM8833 This excellent monitor features stereo sound as well as good definition for text and graphics. Price includes cable and two day (after payment clearance) courier deliver. £225.00

## ACCESSORIES

ACCECCOTILEC	STATE AND
A500 Dust Cover	3.95
Mouse Mat	3.95
A500/2000 - Printer Cable	6.95
Quickshot Turbo Joystick	10.95
Competition Pro 5000 J/S	12.95
3.5" Disk Head Cleaner	
A501 Memory Expansion	

## PROGRAMMING

K-Seka (assembler)	34.95
Hisoft Devpac V2	
Hisoft Basic (inc. Book, Amiga	
Basic Inside & Out - while sto	cks
last)	59.95
GFA Basic 3	
Metacomco Pascal	68 95

## BOOKS

Amiga For Beginners	10.95
Kickstart Guide	
AmigaDos Ref. Guide	
Amiga Tricks & Tips	
Amiga Basic Inside & Out	
Elementary Amiga Basic	14.95
Advanced Amiga Basic	16.95
The C Language (by K&R)	23.95
December Cuide	CEA



All prices include Postage, Packing & VAT. Please send Cheques/PO's to:

M.J.C SUPPLIES (AF), 40A Queen Street, Hitchin, Herts SG4 9TS TeL: (0462) 420847, 421415 or 32897 for enquiries/Credit Card Orders



vou Then it

ent

at be

in the 009 to

es use

fects.

es s five ate one

rum 1e

le red

0 rs

ide

139.95

. 49.95

...6.50

MAIL ORDER

## SOFTSELLERS





6 BOND STREET, IPSWICH, SUFFOLK IP4 1JB



## 24 HR. MAIL ORDER PURCHASE LINE (0473) 257158/210605

	07	4440	
3D Pool	15.00	AMIG	A
Afterburner	12.99	10.3	13
Airborne Ranger	15 90	16.6	13
Amiga Gold Hits		16.9	9
Archipelagos	15.99	15.9	ìΩ
Amalyte	12.99	12.9	19
A.P.B.	13.99	13.9	19
Astaroth	15.95	15.9	19
Baal Balance of Power 1990	15.00	12.9	19
Balisticks	12 99	12.0	p
Barbarian II	12 99	12 9	ρģ
Batman	12 99	15.0	pg
Battlechess	16.99	15.9	19
Bio Challenge	15.99	15.9	19
Blasteroids	12.00	15.3	121
Bloodwych	15.90	15.9	ia Di
Blood Money	16.99	15.9	ig
Bubble Bobble	12.99	12.9	ğ
Buggy Boy	12.99		
Butcher Hill	16.99		9
Captain Blood	15 90	15.0	
Carrier Command	15.99	15.9	
Castle Warrior	16.99	16.9	
Chaos Strikes Back	13.99	13.9	9
Chrono Quest	19.99	19.9	
Combat School	12.99	15.9	
Cosmic Pirates	12 99	12.9	
Crazy Cars II			
Custodian	12.99	12.9	ġ
Cybernoid II	12.99	12.9	9
Date Thompson's O.C.	12.99		
Darkside		Annual Later	9
Deluxe Monopoly	12 99	12.0	
Deluxe Music		49 9	۵
Deluxe Paint II		40.00	۵
Deluxe Paint III		50 Q	ς.
Deluxe Photolab		49.99	3
Denaris		13.90	9
Double Dragon	12.99	12.90	9
Dragon Ninja	. 13.99		à
Dragons Lair	12.00		3
Driller	15.00	12.99	
Dungeon Master	15.99		į
Eliminator	7.99	7.99	
Elite Eye of Hercules	15.99	15.99	
Eye of Hercules	16.99	10.00	
F16 Combat Pilot	15.99	15.99	Į
Falcon Mission Discs	12.99		
Fed. of Free Traders	19.99	12.99 19.99 15.99	i
Fernandez Must Die	15.99		
Ferrari Formula One		15.99	
Fish	16.99	15.99	
Football Director II	12.99		1
Forgotten Worlds	12.99		
Fright Night	12.99	12.99	
Fusion	16.99		
Fish Football Director II Football Manager II Forgotten Worlds Fright Night Fusion Gauntlet II Gemini Winn	13.99		
Ghosts and Goblins		12.99	
GIBRE	21.99		
Goldragon's Domain			
Urvzor	12 99		
Guerilla War	12.99		
Gunship	15.99		
Hate Heroes of the Lance	16.00		
Hostages	15.99		
Interceptor			
Joan of Arc	13.99		
Kick Off	19.99		
Laticulut	12.99		
Last Crusade	16.99		
Last Ninja 2 Leaderboard Birdie	16 99		
LED Storm	13.99	13.99	
Licence to Kill	15.99	15.99	
Lombard RAC Rally	15 99	13.99	
LED Storm  Legend of the Sword  Licence to Kill  Lombard ACC Rally  Lords of the Rising Sun  Manhattan Dealers		19.99	
Wannattan Dealers	12.99	15.99	

ALL OUR HARDWARE INCLUDES VAT AND FREE DELIVERY UK MAINLAND ONLY

## AMIGA 500 £369.95

AMIGA 500 Air miles pack with 500 free air miles, three games, disc wallet and Spritz graphics package £449.95

AMIGA 500 + 1084S Colour monitor pack ...

C1900

€99.95

A501 Expansion

10845

Colour monitor ..... £249.95 **EXTERNAL DRIVE** 

Cumana 1 Meg ..

ATARI 520STFM

1meg Internal Drive .....

Standard ...

ATARI 520STFM POWERPACK

20 Games, business organiser, 1st basic and music maker £349.95

With Modulator ..... Al 1040STFM

ATARI 1040STFM
Business pack with database, spreadsheet and wordprocessor £449.95

ATARI 1040STFM SUPERPACK 21 Games and Joystick ......£4 £449.95

ATARI SC1224 Colour Monitor .

ATARI SM124
Monochrome Monitor.....

**EXTERNAL DRIVE** 

Cumana 1 Meg

## CITIZEN 120D PRINTER £149.95

10 3.5" Blank Discs	£9.95	Konix Navigator	
Joystick Extenders	£4.95	Joystick	£11.95
4 Player Adaptors	£4.95	Pro 5000 Joystick	£13.95
Mouse Mat	£4.95	Pro 5000 Clear	£12.95
-		Pro 6000 Extra	£12.95
Cheetah 125 Joystick			
QS Turbo Joystick	£9.95	Disc storage Box 40	£5.95
		Disc storage Box 80	£7.95

CHEQUES AND POSTAL ORDERS PAYABLE TO SOFTSELL-ERS. POST AND PACKING FREE IN UK. OVERSEAS £1.50 per item. Subject to availability and price change without notice. Not all titles released at time of going to press.

Manage	ST	AMI
Menace	12.99	12
Microprose Socrer	15.00	
1942	12.00	
Milenium 2.2 1943 Nightraider	12 99	
Ungration Nentune	15.99	
Operation Wolf Outrun Outrun Europa	12.99	
Outrun	13.99	13
Outrun Europa	10.99	10
Overlander	12.99	15
Pacland	12.99	12
Pacmania	12.99	12
Paperboy	12.99	
Personal Nightmare	19.99	19
Phantom Fighter	12.99	12
Phantom Fighter Phobia	15.00	13
Pioneer Planue	12.33	15
Pioneer Plague Police Quest II Pools of Radiance	15.99	15
Pools of Radiance	16.99	16
Populous	16.99	16
Populus Data Disks	9 99	9
Powerdrome	16.99	16.
Precious Metal	12.99	12
Precious Metal	15.99	
Premier Collection	19.99	19.
Prison	12.99	12.
Purple Sature Day	15.00	16.
Puffy's Saga Purple Saturn Day R Type Rambo III	13.00	15.
Rambo III	12 99	16.
Real Ghostbusters	13.99	
Realms of the Trolls	13.99	16.
Hed Heat	12.99	
Renegade	12 99	
Return of the Jedi	13.99	13
Rick Dangerous	15.99	15.
Roadblasters	13.99	16.
Новосор	12.99	16.
Robocop Rocket Ranger Run the Gauntlet	15.99	19.
Running Man	12.99	
RVF		
S.D.I.		15.
Savage	15.99	15.
Savage Shoot 'em up Construction	19.99	19.
SIIKWORM	17.00	12.9
Skate or Die	16.99	16.9
Skateball	16.99	16.9
SK Week		13.5
Skychase	12.99	12 9
Space Harrier I or II	12.99	15.9
Speedball	15.99	
Star Ray		15.0
Starolider	15 00	15.9
Starglider Steve Davis Snooker	12 99	12.9
2012	10 00	
Streefighter Super Hang-On Sword of Sodan	13.99	16.9
Super Hang-On	13.99	16.9
Sword of Sodan		19.9
ecnno cop	16.99	
est Drive		
Test Drive II	12.00	19.9
The Story So Far Vol. 1 The Story So Far Vol. 3	12.99	12.9
hunderbirds	15.90	12.9
hunderblade		
hundercats	12 99	
iger Road	13.99	13.9
ime & Magik	12.99	12.9
imes of Lore	15.99	15.9
racksuit Manager	12 99	12.9
rained Assassin	15.99	15.9
ried rivial Pursuits	19.99	19.9
urba Con	13.99	13.9
urbo Cop	15.99	12.9
yphoon Thompson		19.9
J.M.S.	15 99	
Jitima V		15.9
rictory Road		
rigilante	10.99	10.9
/indicators	13.99	13.9
rus	12.99	12.9
ovager	12 99	
Var in Middle Earth	15 99	16.9
Vatering	16.00	
VEC Le Mans	12.99	15.9
Veird Dreams	16.99	16.9
Vhere Time Stood Still		15.9
Vicked		16.9
Vizzball		15.9
enon II	15.00	12.9
William III commen	173 1979	15.9
vhots		10.00
ybots ak McKraken	13 99	

TITLE		COMP	COST
Marble Madhes T & Arnige Eg. 99 99			
Taness So Amion	TOTAL COST £		

Name	
Address	

AMC September



## THE AMIGA SPECIALIST

## **AMIGA SUPER CARD** NEW!!!

- Kickstart 1.3
- Anti Virus
- Floppy Speeder
- **Boot Drive Selector**
- Copy Program
- Functions under F-Keys
- £99.95
- Mouse Driven
- Error Messages
- Shortened Reset
- Extra Utilities

## HARD DISK AMIGA A500/A1000/A2000

20 MBYTE HARD DISK	£369.00
40 MBYTE HARD DISK	£499.00
60 MBYTE HARD DISK	£649.00
(state model, supplied with soft	ware)

## GENLOCK A500 MINIGEN

£99.95 - PROFESSIONAL GENLOCK A500 Low cost, enabling you to merge computer graphics with live video & record the results on a VCR

RENDALE GENLOCK A500 £199.95 **GENLOCK A2000** £199.95

## MIDI INTERFACE AMIGA

- For A500/A1000/A2000 (state model) £24.95
- Midi in, midi out, midi thru software incl.

£19.95 X COPY

- No. 1 Copy Program Parameter copy
- Backs up commercial software
- Update service

## **NEW – VIRUS PROTECTOR**

- Hardware and software
- Place hardware between external drive and computer
- Protects internal and external drives
- Always present after warm reboot
- Gives alarm signal if a virus is found

Protects against 16 Viruses

## HARD PLASTIC DUST COVERS

A500/A1000/A2000	£7.99
Mousepads (top quality)	£4.99
Diskbox 3.5" (80) with lock	£7.99
Diskbox 5.25" (100) with lock	£7.99
White Label 3.5" DSDD (10) disks	£7.99
Printer cable (top quality)	£4.99
Scart cable (top quality)	£9.99

## RAM EXPANSIONS

£89.95

£149.95

£24.95

## A500 512K

 Upgrade to 1 mbyte, fitted in seconds - With clock, battery operated to retain time/date

A500 1.8MByte (512k Ram)

- Board to add 1.8 Mb internal memory to your A500

£399.00

## With Ram 1.8 MByte

- 2 Mb ram expansion A500/A1000 - simply plugs into expansion port

£425.00

## A2000 2MBvte

- 8 Mb board, 2Mb Ram

A500/A1000 2MByte

£449.00

## AMIGA DISK DRIVES

A2000 ALL DRIVES	200.00
3.5" INTERNAL DISK DRIVE	£69.95
WITH TRACK DISPLAY	£104.95
40/80 TRACKS IBM COMPATIBLE	£89.95
5.25" EXTERNAL DISK DRIVE	
WITH TRACK DISPLAY	£89.95
DSDD SLIMLINE DRIVE	£75.00

ON/OFF SWITCH AND THROUGH PORT

Digiview Gold Video Digitiser £149.95 £149.95 A1000 Kickstart 1.3 + Clock

£99.95 **Eprom Programmer** 

Boot Selector (Boot from DF1s) £9.99

## CLUB 68000

Suite 1, Wickham House, 2 Upper Teddington Rd, Hampton Wick, Kingston, Surrey KT1 4DP Tel: 01-977 9596

## DO YOU OWN AN AMIGA COMPUTER?

For everyone who owns one of these computers, CLUB 68000 offers members software, hardware and accessories at huge savings off recommended retail prices! Each item has been carefully chosen to offer the best value and quality.

## HERE'S WHAT YOU GET:

When you join you will receive a free games compendium and a free catalogue every 3 months

## AMIGA TOP 100 GAMES

<u> </u>		
	RRP	Member
Afterburner	24.99	15.99
Alien Legion	24.99	14.99
Asteroth	24.99	15.99
Airborne Ranger		14.99
Archipelagos	24.99	14.99
Beam		15.99
Bio Challenge		14.99
Bomber		15.99
Barbarian II		14.99
Battle Hawks 1942	24.99	15.99
Blasteroids	24.99	14.99
Balance of Power 1990	24.99	15.99
Blood Money	24.99	14.99
Battle Chess	24.99	14.99
Bloodwych	24.99	15.99
Cosmic Pirate	19.99	11.99
Colossus Chess X	29.99	14.99
Chaos Strikes Back	19.99	12.99
Capone	24.99	9.99
California Games	24.99	15.99
Dragons Lair	44.99	27.99
Dungeon Master		15.99
Denaris	24.99	15.99
Dragon Ninja	24.99	15.99
Dominator	19.99	11.99
Demons Winter		15.99
Darkside		14.99

panaaaaa	00	0.00
	RRP	Member
Elite	. 24.99	14.99
Flight Simulator II	39.99	29.99
Falcon F16	. 29.99	19.99
Fed. Of Free Traders	29.99	19.99
F16 Combat Pilot	24.99	14.99
Forgotten Worlds		12.99
Flying Shark		11.99
Gunship	24.99	14.99
Games Winter Edition	24.99	15.99
Hybris	24.99	14.99
High Steel	19.99	11.99
H.A.T.E.	19.99	11.99
Hawkeye	19.99	11.99
Honda Ruf	29.99	18.99
Heroes of the Lance	24.99	15.99
Interceptor		14.99
Jaws	19.99	11.99
Kennedy Approach	. 24.99	14.99
Kick Off	. 19.99	11.99
Kult	.24.99	14.99
Krystal	. 29.99	18.99
Kings Quest IV	29.99	18.99
Lords of the Rising Sun	. 29.99	19.99
Lombard RAC	. 24.99	14.99
Leisure Suite Larry II		14.99
Last Ninja II		15.99
License to Kill	. 19.99	11.99

	RRP	Member
Millenium 2.2	24 99	15.99
Microprose Soccer	24 99	14.99
Manhunter		14.99
Navy Moves		15.99
Operation Wolf	24.99	15.99
Pools of Radiance	24.99	15.99
P.O.W		14.99
Powerdrome		14.99
Police Quest II		
Populus		
Phobia	24.99	15.99
Pirates	24.99	14.99
Pacland	19.99	11.99
Precious Metal	24.99	15.99
Personal Nightmare	29.99	18.99
Pool 3D	24.99	14.99
Running Man		15.99
Robocop	24.99	15.99
Run The Gauntlet		15.99
Red Heat	24.99	15.99
Silkworm		11.99
Savage		14.99
Sleeping Gods Lie		14.99
Steve Davis Snooker	19.99	11.99
Shoot Em Up Con. Set		
Speedball		15.99
Starglider II		14.99

-----

	RRP	Member
Space Quest III	24.99	14.99
Skweek		12.99
Super Skramble Simulator	24.99	15.99
Steigar	19.99	11.99
Sword of Sodan	29.99	18.99
Super Hang On	24.99	15.99
Test Drive II		14.99
Total Eclipse	24.99	14.99
Time Scanner	24.99	15.99
Typhoon Thomson	24.99	14.99
Thunderblade	24.99	15.99
Tech		11.99
Talespin	29.99	18.99
Targhan		14.99
Thunderbirds		14.99
UMS	24.99	14.99
Voyager		15.99
Verminator	24.99	14.99
Vindicators	19.99	11.99
Weird Dreams	24.99	15.99
War in the Middle Earth	19.99	11.99
Who Framed Roger Rabbit		15.99
Wicked	24.99	15.99
Xenon II	19.99	12.99
Xybots	19.99	11.99
Xenophobe		14.99
Zany Golf	24.99	14.99

## AMIGA PROFESSIONAL SOFTWARE

۹			RRP	Membe
á	64 Emulator 2.0	64 Emulator	69.95	49.9
j	Aegis Draw 2000	Cad Cam	229.95	149.9
Ą	Aegis Modeller 3D	Cad	69.95	49.9
å	Aegis Sonix	Music	59.95	37.9
3	Aegis Audiomaster II	Music/Midi		37.9
ŧ	Aegis Videoscape 3D	Cad Animation		109.9
å	Aegis Lights, Camera, Action	Desktop Video		37.9
ì	Aegis Videotitler	Desktop Video		79.9
1	Aztec C Prof	Prog. Language	249.95	164.9
ă	A Talk III	Communications	79.95	59.9
ì	BBS PC	Communications		89.9
ţ	Benchmark Modula 2	Prog. Language	139.95	99.9
ă	Butcher 2.0	Utility		21.9
ä	Comic Setter	DTP Comic		34.9
ũ	Comic Setter Art 1	Super Heroes		12.9
Ñ	Comic Setter Art 2	Funny Figures	19.95	12.9
ŭ	Comic Setter Art 3	Science Fiction	19.95	12.9
đ	Caligrapher 1.05	Font Editor		64.9
Ñ	Critics Choice	Word/D.Base/Spread.		109.9
y	DDS Toolbox	Utilities		34.9
ñ	Digiview Gold	Video Digitizer		109.99
i	Digiview Copystand	Copystand		49.9
Ì	Deluxe Paint III	Graphics		52.9
۱	Deluxe Music	Music	69.95	47.99
i	Deluxe Video	Video Animation	69.95	47.99
	Deluxe Productions	Video Productions	119.95	89.99

	RRP	Member %
Deluxe Photolab	Animation Ham69.95	47.99
Deluxe Print II	Print Utility 49.95	32.99
Drum Studio	Prof. Drum Track29.95	14.99
Digicale	Spreadsheet39.95	24.99
Devpac II	Prog Utilities59.95	37.99
Digipaint	Graphics 39.95	27.99
Dos to Dos	Utility 39.95	27.99
Director	Desktop Video 59.95	39.99
Directors Toolkit	Utility	21.99
Design 3D	Cad Elec/Technic 79.99	54.99
Fun School 2	Education (2-6, 6-8, 8-12) 19.95	12.99
Fantavision	Animation 49.95	27.99
GFA Basic 3.0	Prog Language69.95	49.99
Goldspell II	Spelling Checker 39.95	27.99
Gomf 3.0	Guru Buster 39.95	24.99
Hercules Copy	Copy Program 24.95	9.99
Home Accounts	Financial	19.99
Intro Cad	Cad Cam 59.95	39.99
K Comm 2.0	Communications 29.95	19.99
Kind Words 2.0	Wordprocessor 49.95	34.99
Logistix	Integrated Business 114.95	69.99
Lattice C 5.0 Dev	Prog Language 249.95	162.99
Lattice C+	Prog Language 359.95	249.99
Mailshot Plus	Mailmerge 49.95	34.99
Movie Setter	Desktop Video 69.95	47.99
Omega File	Database24.95	9.99

		RRP	Member
Protext 4.0	Wordprocessor	99.95	62.99
Protext Filer	Database	24.95	16.99
Protext Office	Business	34.95	24.99
Professional Tax	Income Tax	39.95	24.99
Pagestream	Desk Top Publisher .		134.99
Publishers Choice	Integrated DTP		64.99
Pagesetter	DTP		54.99
Professional Page	Prof. DTP		169.99
Photon Paint 2.0	Graphics		49.99
Photon Video	Desk Top Video	99.95	69.99
Professional Draw	Cad/Graphics	139.95	99.99
Power Windows 2.5	Utility		49.99
Pro Video	Video Animation	169.95	118.99
Promise	Spelling Checker		9.99
Quarterback	Hard Disk Utility	49.95	33.99
Synthia	Midi	99.95	69.99
Superbase Personal II	Database	99.95	62.99
Superbase Professiona			164.99
Sculpt 3D	3D Animation		62.99
Sculpt 4D	4D Animation	425.00	339.00
Studio Magic	Midi		49.99
Superback	Hard Disk Utility	49.95	34.99
Turbo Silver 3D	3D Animation		99.99
Word Perfect 4.2	Wordprocessor		164.99
Workbench 1.3 X Copy	1.3 + Manual		12.99
X Cad Designer	No1 Copy Program . Cad		74.99
The state of the s	Old minimum of minimum		14.00

## CLUB 68000 INTRODUCTORY OFFER

Fill out this coupon and return it to CLUB 68000 Ltd. Your only commitment is to pay £10.00 for one year's membership of CLUB 68000. Mail this coupon to CLUB 68000 Ltd., Suite 1, Wickham House, 2 Upper Teddington Road, Hampton Wick, Kingston on Thames, Surrey KT1 4DP

Please send me		Name
	***************************************	Address
Type of computer	£10.00	
Cheque enclosed		Postcode
Visa/Access/Master. No		Telephone No.
Postal Order		Date
Software Post & Packaging within the UK and EEC £1.00; Non EEC £3.00.		
Hardware Courier service £6		Signature

# John Kennedy shows the Wimps way to Cordon Bleu menus

HOW do you pronounce Amiga? I only ask because several people I know – the editor of Amiga Computing for one – pronounces it Am-ee-ga and both Green and myself pronounce it Am-aa-ga. With my regional accent it probably sounds like Armahgar.

The computer, when asked, will consult its Workbench disc and say Am-ee-ga using its wonderful built-in speech synthesiser. Well it sounds to me like Am-ee-ga, but I suppose it could be anything from Syntax Error to Gottle of geer.

A lady from Commodore who spoke to me on the telephone pronounced it Am-aa-ga. Let me know how you say it.

The Armahgar computer is famous for its Wimp programming environment. Pseudo computer intellectuals love to explain how the Wimp system came about and will mutter words like Xerox, Palo Alto and Macintosh. These people are all wrong, especially if they tell you that Wimp stands for Windows, Icons, Mouse and Pull-down menus or even Windows, Icons, Menus and Pointers.

The first Wimp system was actually produced by Arnold Cringeworthy, a librarian in Uxbridge, Middlesex. Mr Cringeworthy was cataloguing the library's large collection of flower arranging books but found the huge number of keypresses tiring. He invented the menus and pointer concept one afternoon and then added the windows – with red and white striped curtains – because "they looked nice".

He had initial problems with the mouse, partly due to a lack of mouse mats but mostly because he was

...that funny speckled grey that makes you think your eyesight is faltering

scared of it. Eventually, after weeks of trial and error and standing on top of tall stools, he had a complete working system which he sold to a wellknown American company.

This company, which shall remain nameless because we here at Armahgar Computing respect professional working ethics and are scared of lawsuits, was working on a

Choose.count:

```
Ordering from menus.
(Two pints of lager and a
                                                             How.to.do.it:
  packet of crisps please.)
                                                                 Choose the speed at which the processes
                                                                 are to be done.
  GOSUB Define.menus
                                                               which.item=MENU(1)
                                                                ON which item GOSUB Slow, Medium, Fast
  process=0 Initially do nothing.
ON MENU GOSUB Menu.handler
                                                             RETURN
  PRINT 'I'm bored. Do something!"
                                                             --- All the different ways of doing things ---
  endless.loop:
   Choose the process to branch to.
                                                                 Remove the tick from Fast and Medium items
                                                                 and put a tick next to the Slowitem.
  ON process GOSUB Count.numbers, Go.beep
                                                               MENU 2,1,2:MENU 2,2,1:MENU 2,3,1
   If process = 0 nothing will happen.
                                                                delay=1000 'Set a large delay.
                                                             RETURN
GOTO endless.loop
 --- The subroutines start here ---
                                                                 Remove the tick from Fast and Slowitems
Menu, handler:
                                                                 and put a tick next to the Mediumitem.
   Decide which menu has been selected.
                                                               MENU 2,1,1:MENU 2,2,2:MENU 2,3,1
                                                               delay=500 'Se't a medium delay.
  which.menu=MENU(8)
    which.menu GOSUB What.to.do, How.to.do.it
RETURN
What.to.do:
                                                                 Remove the tick from Slow and Mediumitens
                                                                and put a tick next to the Fast item.
   Decide which process is to be done
                                                              MENU 2,1,1:MENU 2,2,1:MENU 2,3,2
delay=0 'Set a small delay.
   or whether to quit to Basic.
 which.item=MENU(1)
 ON which.item GOSUB Choose.beep, Choose.count, Quit
                                                             --- Decide what is to be done ---
```

process=1:MENU 2,0,1 'Switch on the How to menu. process=2:MENU 2,0,1 'Switch on the How to menu. RETURN MENU RESET: STOP ' Switch of menus and return to Basic. --- All the things to do ---CLS:FOR t=1 TO 10:PRINT t;:GOSUB Slow.down:NEXT RETURN PRINT 'Beep': BEEP: GOSUB Slow.down Slow.down: FOR yawn=1 TO delay:NEXT --- The menu definitions ---Define.menus: MENU 1,8,1,"Things to do" MENU 1,1,1,"Go Beep" MENU 1,2,1,"Count to 18" MENU 1,3,1,"Quit" MENU 2,0,0, How to do it' MENU 2,1,1," Slowly" MENU 2,2,2," Mediumly' MENU 2,3,1," Fastly" MENU ON

Listing I

rival Butch operating system.

The Butch system involved headbutting the computer monitor to select possible options displayed on different styles of beer bottles. Playing games with it rapidly led to brain damage. It was doomed to failure.

RMAHGARBASIC allows us to use the windows and menus of the Wimp environment from within our own programs. When done properly this gives homegrown programs a touch of real class. Using the MENU commands and functions is quite straightforward.

But be careful – it is easy to crash the computer if you define a menu incorrectly. Be wise and save your program often. It only takes a few seconds to do a SAVE or SAVE AS from the Project menu.

We are supplied with seven commands to control the menus. The syntax of the first is:

of

of

ng

MENU menu-id, item-id, state [, title]

The *menu-id* is a number from 1 to 10 referring to the menu that you wish to pull down from the top of the screen. The Project menu is where menu number one will appear.

Number 10 will appear on the far

right.

The *item-id* is a number from 0 to 19. A value of zero means something special; it means you are referring to the title of the menu. A value other than that defines which item in the menu you are considering. An item could be a command such as "Clear the screen" or an option such as "Use the colour blue".

Now we come to the interesting

## Using the menu command is straight forward

one, the *state*, which takes a number from 0 to 2. Zero means switched off. If the item-id defined previously is zero, the entire menu is deactivated, otherwise only the relevant item in the menu is made unavailable. This unavailableness is indicated in the usual way by making it go that funny speckled grey which makes you think your eyesight is faltering.

When an item is like this it will not

be highlighted when you point at it. A state value of 1 means the item in the menu is enabled, in other words you will be able to highlight it when you point at it. A value of 2 means the item is enabled and you get, at no extra charge, a little tick before the item name.

Because this little tick will take up two character spaces, you must leave two spaces blank before the item's name. Leave them out if you don't believe me.

The item's name – or *title* – is the optional last parameter in the MENU statement. This is how you name your menus and the items inside when you first define them.

When your program wants to change the state of an item – for example, switch an option off or on – you will usually leave the name out of the parameter list. Of course, there is no reason why you can't rename the items or menus by supplying a new name.

As you will have no doubt discovered while using the Armahgar, the pointer can be moved around the screen more or less independently of anything else which is going on.

ArmahgarBasic makes use of this to allow the windows to be selected no

matter what your program is doing at the time.

As long as your program can handle all the possible menu options, everything will proceed as normal. But first you must tell ArmahgarBasic to only service the menus whenever it has to by using the ON MENU GOSUB feature.

By putting ON MENU GOSUB label at the start of the program, the flow of control will only jump to label whenever the user makes a selection from the menu. It is up to the Basic code following this label to discover which menu has been pulled down and which item in the menu has been

Windows can be selected no matter what your program is doing at the time

selected. At this point the program may decide to alter the start of some of the items in the menu by adding or removing the tick, or even by making the item go all grey, bletchy and unavailable.

To discover which menu and which item have been selected make use of the MENU(0) and MENU(1) functions. MENU(0) will return the number of the menu, and MENU(1) the number of the item, which has been requested.

Which leaves us the remaining four menu commands: MENU ON, MENU OFF, MENU STOP and MENU RESET.

BEFORE your program can access the menus they must all be switched on by using MENU ON. This allows the ON MENU GOSUB to function as a background task in your Basic program. The computer gets on with the job of running a Basic program, but it is also keeps an eye out to see whether anything else is happening. It is as though it was watching television and waiting for the front door bell to ring.

Sprites and Objects can also be set up to cause events. We may look at this in the not too distant future.

MENU OFF will stop the event trapping. Although you will still be able to access any of the menus, nothing will change. Another MENU ON can switch the event trapping back on again.

MENU STOP will temporarily prevent ON MENU GOSUB from working, but will remember if an item has been selected, although at the moment it will do nothing about it. As soon as a MENU ON happens the ON MENU GOSUB will start to work again, beginning with the item selected during the time that MENU STOP was in operation.

MENU RESET will clear away all your menus completely. If your program terminates without issuing this command, the menus created by ArmahgarBasic will be overwritten. I have yet to discover a use for this other than to confuse everything completely and stop me using the Cut and Paste facilities.

Let's take a look at the example listing. It is really only for discussion purposes, but feel free to type it in if you want – it does work. Besides, messing around with a program and running it is the fastest way to learn about programming.

Listing I wants to perform one of two trivial processes, either count from 1 to 10 or go "beep". A bit like Green really. The user may select which of the processes is to be used and can select the speed at which the computer will do them. A Quit option is included to provide a neat and tidy way of stopping the program.

Two menus are used, one called "Things to do", the other called "How to do it". The menus are all defined in the subroutine called Define.Menus.

Notice how the "How to do it" menu is initially switched off by defining its zero-eth state to be zero. This is because when the program starts execution it is not doing anything, so the second menu – which sets the speed of whatever is being done – is not relevant. Once the program starts doing something the menu can be switched on.

The program makes extensive use of the ON expression GOSUB structure. Do not confuse this with the ON MENU GOSUB statement – it has nothing to do with event trapping. ON expression GOSUB works by evaluating the expression to an

integer value. If it evaluates to 1, the program branches to the first label in the list; If the value is 2 it branches to the second label in the list, and so on.

This is very handy, because both MENU(0) and MENU(1) return integers from 1 onwards. Thus the part of the program which says:

which.menu=MENU(Ø)
ON which.menu GOSUB What.to.do, How

will branch to What.to.do if the first menu is chosen and to How.to.do.it if the second menu is chosen. Once either What.to.do or How.to.do.it are reached, a further ON GOSUB will determine the subroutine needed to handle each individual item, as in:

which.item=MENU(1)
ON which.item GOSUB Slow, Medium, F
ast

The first thing the subroutine which handles the slow item does is to switch off both the fast and medium options. Although only one of these was likely to be on, slow does not know which one, so it plays it safe by switching them both off and itself on.

If you are running the program, change one of the options and then pull the menu down again. The tick

Messing around with the program is the fastest way to learn

should have moved from beside one speed option to another.

Remember that the text in the item names Slowly, Mediumly and Fastly starts with two blank spaces for where the cute little tick will appear. No such tick is provided for the different processes – Count to 10 and Go Beep – but there is no reason why you shouldn't add some if that is what you really want.

I apologise for the grammar. I don't think Fastly is strictly correct but my English teacher was very cute and I had other things on my mind.

Which brings brings us to the close of this month's look at ArmahgarBasic. What's on the menu for next month? You'll just have to wait and see. Bye.

## What you'll find on our cover disc

September 1989

A MEGABYTE OF SUPER SOFTWARE

Protest: The best Arriga
morthyrocestor.

2 zamer: A Programmer's
secrets invended.
Harne Accusants: Air you
To load: Switch on and insert disc

Full instructions are in the September issue of Amiga Computing

IGITA calls this program a life organiser, which is a posh way of saying diary-cum-year-planner. Using Day by Day is an absolute doddle, as easy as scribbling a note.

Firstly, enter the current date. If you have a battery backed-up clock, press Return once to accept the system date. Day by Day will then display your Urgent messages, Overdue messages and This Week messages.

Since you have not entered any messages at this stage, select Forward by pressing F or clicking on the F gadget with the mouse. This will step through the messages in the demo file one page at a time.

You can keep selecting F until the main menu appears, but this might be a good time to play with some of the other features. So stop clicking and look at the foot of the Day by Day window.

The gadgets there carry out all of the actions needed for editing, updating and browsing through your appointment book.

Prev makes the previous message the current (high-

## Day by Day

lighted) message; use this to step backwards through the category one appointment at a time. Next makes the following message the current message; use this to step forward through the category one appointment at at time.

Add allows you to enter a new appointment; you will be prompted for the date and the message. Use Delete to remove the current message and Update to alter or edit the week by week ...
month by month ...
year by year organiser

DIGITA
INTERNATIONAL

the current message.

Backward moves to the previous page, Forward moves to the next page. Output sends the current screen to the printer and Exit returns to the main menu.

Go to the main menu now by pressing or clicking on E. See the Options sub-menu? For the hard of thinking, it's the second rectangle down on the right.

OK. This sub-menu is used to determine the details of the message. If you switch Duration on, when adding a message you will be prompted to specify the duration of the message or appointment.

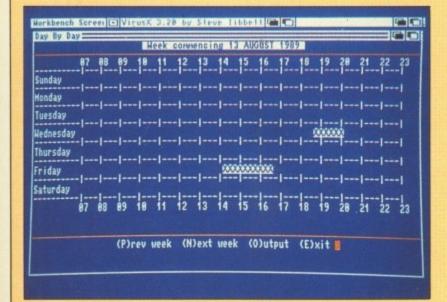
Switching Range on allows you to enter the same message over a large number of days, which is ideal for regular meetings. Switching Time on lets you enter the starting and finishing time for appointments. The best way to see what effect these options have is to play with them.

Choose Change Categories (top rectangle on the right) if you want to add a new group or change the name of one. Day by Day will let you create categories numbered 1 to 9. Four are already set up in the bottom left rectangle.

When you select Quit you will be asked if you want to save the file. Press Y or N, it makes no difference, this demonstration copy of Day by Day has its save routine disabled. You'll have to buy the proper program if you want to create and save your own appointment book. In the meantime, explore and enjoy.

To load Day by Day, switch on your Amiga, put the cover disc into DF0:, click the left mouse button once to wipe out the Zowee demo and then double click on the CD002 icon.

When the disc window has opened, double click on the DIGITA drawer and then the DayByDay icon.



Hmmm, not a lot on this week. Must get in some golf practice

## COVER DISC // COVER DISC // COVER

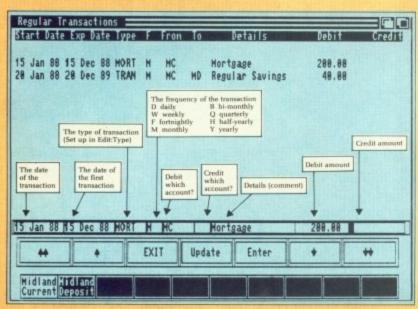


Figure I: Oh dear, another bad month.

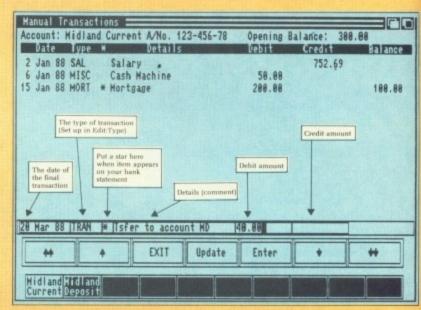


Figure II: Sigh. Just have to cut down the housekeeping

IKE all financial programs, Home Accounts will take a little getting used to. But just a little. Start by entering the date and time. For the purposes of this demonstration, enter 01-Jan-88 and click on OK.

The easiest way to see how Home Accounts works is to examine the structure of an example file, so select Load from the Project menu and Click on *demo.ha* in the file requester, followed by OK.

When the file has loaded two boxes will appear at bottom left labelled Midland Current and Midland Deposit. Click once on Midland Current. It will change colour to let you know that this is the account you are currently working with.

## **Home Accounts**

Now select Type from the Edit menu. This is where you specify your various kinds of income and expenditure. Each type has a code of up to four letters which will be used later in the program; you can add a fuller description to the right. Up to 60 types can be defined.

Click on Exit and then select Regular Transactions from the Edit menu. Your screen will look like Figure I. This screen is where you enter details of regular payments and incomes.

Two payments have been

defined, a mortgage (MORT) of £200 per month and regular savings (TRAN) of £40 per month, which gets transferred automatically from your current account (MC) to your deposit account (MD)

Let's enter your salary as a regular income. Click on Enter until you get a blank entry on the edit line. You'll see the orange blob of the cursor in the far left edit box. Enter a start date of 27-Dec-87 and press Return. The cursor will move-into the next box to the right. Enter an expiry date of 27-Dec-89 and press Return.

Salary has been defined as type SAL, so enter SAL in the type box followed by M for monthly in the Frequency (F) box.

The money is not coming from one of your accounts, so skip the From box and type MC into the To box, signifying that your salary gets paid into your current account.

Type "Yummy money" into the Details box, skip the Debit box and enter the amount of your salary in the Credit box. Be generous, this may be the closest you'll ever get to a six figure income.

Press Return to finish entering the transaction and you'll see it appear at the bottom of the list. If you have made mistakes, click on the transaction to get it on to the edit line, click on the box you need to edit and use the cursor and Del keys to amend the details.

Choose Edit Keys from the Help menu for more details on which keypresses do what. When you've finished editing, press Return until the edit line goes blank, or simply click on Enter.

Click on Exit to leave Regular Transactions and then on Edit Date/Time. You are going to make time pass quickly. Since you are just fooling around with the program, change the date to 01-Apr-88 and click on OK. Now go to the Account menu, click on Update, then select Manual Transactions from the Edit menu.

Your screen will look something like Figure II, except there will be more transactions. Notice that your salary (Yummy money) has been credited to you for each month up to the current one.

This screen is where you enter all transactions that do

## MouseZoom

OUSEZOOM is a public domain program by John Meissen which increases the speed of your mouse pointer. It works exponentially – the faster you move the mouse, the faster the pointer moves.

This gives you good resolution at slow speeds and still allows very fast mouse movement when you want it. When you boot the cover disc MouseZoom is run automatically from our Startup-Sequence.

To get rid of it, double click on the MouseZoom icon again or issue a MouseZoom command from the CLI.

To transfer MouseZoom on to another disc you will be required to copy just two files, MOUSEZOOM and MOUSEZOOM.INFO.



ace nce

.88

ish

and

the

ave

the

the

box

the

to

the

ails

do

hed

ntil

or

ave

ind

ou

ust

ro-

01-

)K

int

nen

ons

ok

П,

ore

nat

ev

for

ent

To load Home Accounts, switch on your Amiga, put the cover disc into DF0; click the left mouse button once when you've had enough of the Zowee demo and then double click on the CD002 icon.

When the disc window has opened, double click on the DIGITA drawer and then the HomeAccounts icon.

not happen automatically. If you spend out cash on a case of champers, enter the details on this screen. Here, too, is where you enter how much you paid off your credit card this month.

Enter a few. They don't have to be after the last date in the list, you can insert transactions anywhere in the list by entering them normally and clicking on Update, which will sort them into the correct date order. Select Sorting from the Help menu for more details on how to order your list of transactions differently.

Other things to play with are setting up a budget, filling in each account's memo pad – which is useful for remembering important phone numbers – and asking for reports.

The Report menu is self-explanatory. Explore it and have fun. Note that to get any sense from any of them, especially Budget Progress, you'll have to have entered a number of expenditures into to the Manual Transactions list. Don't forget to look at the Pie and Bar graph options.

When you come to quit Home Accounts will ask you if you want to save first. Click Yes if you must, but there's no point because the save routine in this demonstration copy doesn't work.

## COVER DISC

## Win £1,000! up to

We are looking for original contributions for the *Amiga Computing* cover disc. If you think something you have written or drawn is good enough to share with everybody else who reads the magazine, send it along and we will have a look. If we like what we see, it could earn you up to £1,000.

Please let us know if your submission needs any files from the Workbench disc. Programs which use the Amiga's built-in speech can be particularly greedy in this respect.

If your program is clickable from Workbench, feel free to design an original icon. In fact, we'll pay small amounts for good icons, even if there is no program attached. But don't make them too big. And please use the standard Workbench colours.

Bear in mind that a program which does not run on a 512k machine would have to be exceptionally good to make it on to the disc.

Please enclose this coupon, or a photocopy of it, with your submission. Include a file on the disc with full documentation, your name, address, phone number and a few details about you and your kit. Don't forget to duplicate on the disc label the program name, your name, address and phone number. If you want your disc back, enclose the correct amount in stamps.

Name
Address
Daytime phone
Evening phone
Submission name
Submission sizebytes in total
NOTE: We will accept submissions up to 500k in total length, including documentation. But the shorter your submission, the better chance it stands of getting on to the disc. If it is a compiled program, include all the source code, but do not count this in the size of the submission.  Write a brief description of your submission below. If it consists more than one file, describe what each file is for. Attach an extra sheet of paper to this form if necessary:
·A,
Sign this declaration:
The stuff on this disc is mine. I didn't nick it off someone else. It hasn't been published before and I haven't submitted it elsewhere because I want Amiga Computing to publish it.
SignedDate
Post your submission to: Jeff Walker, Amiga Computing, North House, 78-84 Ongar Road, Brentwood, Essex, CM15 9BG.

## COVER DISC // COVER DISC // COVER

VERY word you read in this magazine has been processed with Protext. Amiga Computing uses two A2000s, and Protext is running within them 23 hours a day; well, you've got to load a game occasionally.

When you spend half your life in front of a word processor you get to know what you want. Protext offers it all. The main thing it scores on is speed. Thanks to being text, instead of graphics, orientated it can scroll, delete and insert words at a speed other wysiwyg word processors dream about.

We will be starting a series

## Protext

on some of the cleverer features within Protext next month, but for the moment you can experiment with the free version on the cover disc. This is the full working A500 version.

The main difference between what you have taped to the front of the magazine and the copy the shops sell for £100 is that the demo comes without a spell check dictionary and will only edit small files up to 2k.

The drivers supplied will work with most popular printers, and the demo Protext will save your files. So if you only want to leave a note to the milkman or compile a list of all the things an ST does better than an Amiga, you don't have to worry.

Before using the software in anger it is worth having a look at the rolling demo. This is impressive not only for what it says but for what it does. All the tricks used to make the text scroll, draw boxes and explain what is going on rely on Protext features.

Protext uses a command line, much like the CLI or Shell. In preference to a formal Intuition requester you type a command to load a file. You can switch between Command mode and Edit mode by pressing the Esc key.

Try it. When you have an > on the screen Protext is waiting to be told to do something.

Type PRINT and press

Return to print the file you are editing. PRINT filename will send a file called filename from the disc to the printer.

There is a big instruction file called PROTEXT.DOC in the ARNOR directory, it might be useful if you print it out. New printer ribbons are available at £50 each from Amiga Computing readers offers....

Most of the commands have logical names and abbreviations. PRINT can be shortened to P, LOAD to L and SAVE to S. Commands don't have to be typed in upper case.

To read the directory type DIR. This will produce an AmigaDos-style List. Try CAT – or press F2 – for a different look directory.

Mastery of the command mode makes Protext very powerful and you very efficient. You can write programs using the command mode and mail merge languages.

To create a new document you don't have to name it, that only comes when it is time to save the file. Go into Edit mode so that the orange cursor appears at the top of the screen under the letter L. If through your earlier playing you already have some text in the document, go to the end of the text and hold down Del.

```
PSOIDXI W4.200 (c) Arnor, Document READ, WE (2K)

PSOIDXI Line 18 Co 1 No markers set Auter 200 1 No markers set Auter 21:57122

The deno was assembled on a 2.5 meg Aniga and will probably not assemble on a 512k machine. If you have memory problems make sure that your Devpace is set up NOI to load MCNAH and you re-size the windows for the CLI window to as small as possible and the GENAH window to as small as you can without obscuring the Assemble option screen. Assemble to disk not memory.

**Directory CD8827ARNOR**

The protect file commands

For further details on any command, type HELP followed by the command name either from command mode or the menu option "Help on named subject". This in many cases gives an abbreviated form of the command in brackets.

LOAD: retrieves a document from disc ready for editing.

SAVE: stores a document from disc ready for editing.

SAVE: stores a document in a disc file.

CAI: lists the files on disc.

MERG: merges a file into the current document.

SAVES: saves a marked block as a file. "HELP BLOCKS" for more details.

CLEAR: clears the text from memory.

SPELL: spell checks a file on disc.

A, B, C or D changes the selected drive (if the chosen drive is fitted).

Other file commands: NAME, PRINTF, PRINTFB, SAVEA, SAVEAB, SPLII, TYPE
```

Online help can be a godsend for beginners

```
PROJECT v4.2eD (c) Arnor, Document HLAD.HI (2K)

Fage 1 Line 12 Cgl 36 No markers set Autre Printer EPSON Rey 14 Optical Printer EPSON Rey 14 Optical Proling (DIR)

Info diablo.spd 2K

epson.ppd 3K

epson.ppd 3K

epson.ppd 2K

from arnor itd.info 4K

ibm.ppd 2K

protext.cfg 2K

protext.cfg 2K

protext.doc 75K

Dise 1 + + to move. TAB to change display format. F - change file spec

L load, M - merge, I - type, C - chg to subdir, P - parent directory

E - erase, R - rename, D - change directory/drive, ESC - edit file
```

The File Manager option is reached by pressing Right-Amiga-C in Edit mode or choosing Catalogue from the Project menu.

Protext offers a more compact style of disc catalogue with file sizes given to the nearest kilobyte

## DISC // COVER DISC // CO

There are quicker ways of getting rid of your prose, either press Esc (to go back into Command mode) and type CLEAR, or go to the beginning of each line and press Ctrl and E together. If you use Ctrl-E to delete, you

he

it

it

re

d

n

m

is

0

To load Protext, switch on your Amiga, put the cover disc into DF0:, click the left mouse button once to zap the Zowee demo and then double click on the CD002 icon.

When the disc window has opened double click on the ARNOR drawer and then the Protext icon. After that follow the onscreen instructions.

can get the last line back with Ctrl-U.

Protext supplies online assistance by means of its command. For example, type HELP FILES to get a list of all the commands to do with file handling. Type HELP SWAP to get a synopsis of the SWAP command.

The on-line help needs the COMMAND.HLP file, which in this demo version of Protext must be present in the root directory of the disc in DFO:.

This is just a very quick overview of Protext. A good way to explore the program is to take a trip around all the pull-down menus. There is much more to this word processor than we can possibly tell you about here. Do read the .doc file and have a look at the rolling demo - it takes more than an hour to

If you have a vanilla A500 with no extra ram, the Protext rolling demo may not work correctly towards the end of its run, about 50 minutes or so into it. It may fail to load some datafiles, or it may hang altogether. Don't panic, it's just your Amiga's way of asking you to buy it more memory.

ITHIN hours of our breaking the news of the (then) forthcoming cover disc at the Commodore Show last June, young males were coming up to us at our stand, winking and thrusting discs into our mits. One of those people was Jolyon Ralph, a dedicated insomniac and Amiga machine code programmer from Surrey.

Back at the office Monday morning (aches, pains, groan, put the kettle on, Rockman) we booted Jolyon's disc. We were impressed.

Just a few days later (it took us that long to get him out of bed) we commissioned Jolyon to write a special demo for Amiga Computing. Getting your name in lights and earning a few bob on the side is as easy as that sometimes.

So crank up the volume, sit back and enjoy. The music is by Kevin Collier, a professional computer games musician. His best Amiga effort to date is the soundtrack to Firebird's Savage, but a little birdie tells us he has something even better up his sleeve for the Amiga Computing cover disc.

As well as the demo. which you can't miss because it autoboots from the Startup-Sequence, we've given you the full source code. Word of which has

The Zowee

already caused some concern in hacking circles.

They are not happy with us putting their assembly language secrets into the

public domain.

us of Amige Co

To load: Switch on and insert disc

Well they can lump it, because we'll be doing the same thing for the next few months as Jolyon uses our cover disc and the pages of Amiga Computing educate you in the art of Amiga machine code, the sort of stuff "proper" programmers turn their noses up to in public while secretly hacking it to bits to find out how it's done.

The source code has been compressed into an archive file. See Jolyon's Zowee article for tips on how to UnARC



## FAULTY DISC?

 IF you are not a subscriber and your disc does not work, please send it to: Direct Disc Supplies, Dept Amiga Computing, Unit 19, Teddington Business Park, Station Road, Teddington, TW11 9BQ. You will be sent a new disc.

 IF you subscribe to Amiga Computing and your disc has been damaged in the post, please send it to: Database Direct, Amiga Cover Disc, FREEPOST, Ellesmere Port, South Wirral L65 3EB. You will be sent a new disc.

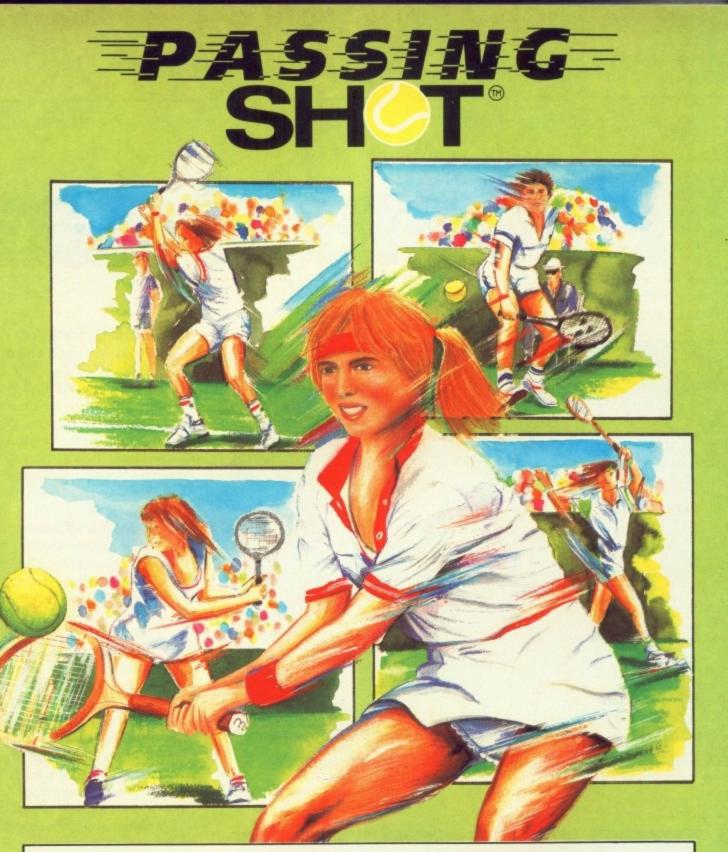
 IF you damage your disc - for instance if the dog has chewed it or your mum has washed it - you can get a new one by sending £1.50 to: Direct Disc Supplies Ltd. Please make your cheque or postal order payable to Direct Disc Supplies Ltd.

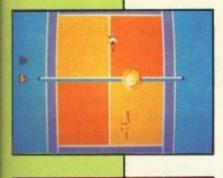


TO ORDER N PAGE 95 RRP £19.95

Your mission consists of collecting pods by hovering above them and switching on your tractor beam, but all the time you have to take into account the effects of intertia and gravity, controlling your ship as smoothly as possible - to avoid colliding with the planet below.

"The graphics are wonderfully drawn and smoothly scrolled in all directions. Every landscape is a joy to look at and explore... delicate, addictive gameplay". - John Kennedy, Amiga Computing.





bably

ould

ting.





## anyone for tennis?

ot 'alf! Image Works serves up another ace with this conversion of the Sega® coin-op smash.

Featuring tennis-ational singles or doubles action on clay and grass courts from around the world, Passing Shot<sup>®</sup> is the most accurate simulation of the noble sport to appear since the real thing!

Game, Set and Match to Image Works!

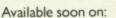
"It's rally volley good!" Doris Decker

"I can't fault it!"
Ivor Lentil

Image Works, Irwin House, 118 Southwark Street, London SEI 0SW. Tel: 01-928 1454.

PASSING SHOT™ HAS BEEN MANUFACTURED UNDER LICENSE FROM SEGA® ENTERPRISES LTD., JAPAN, AND "PASSING SHOT"™ AND SEGA® ARE TRADEMARKS OF SEGA® ENTERPRISES LTD.

© 1988 SEGA ENTERPRISES LTD. MANUFACTURED BY MIRRORSOFT LTD.



Amiga
Atari ST
Commodore 64 (cassette)
Commodore 64 (disc)
Amstrad CPC (cassette)
Amstrad CPC (disc)
Spectrum (cassette)
Spectrum (disc)
MSX (cassette)

Screenshots from Atari ST version





## came, I saw,



32 colour mode can give some interesting effects



Mirror, mirror, on the wall. . .

SITTING in your front room you probably have a video. Not far away sits your Amiga. The Amiga is playing games and the video playing Neighbours, but never the twain shall meet. It might be the cost of the extra bits, or the complexity of the connections, but desktop video remains the province of the seriously keen. Perhaps SuperPic will change all this.

SuperPic, from JCL Business
Systems, is a combined digitiser and genlock. It can capture full-colour live video signals from a camera, camcorder or video recorder, and turn them into Amiga pictures – digitising. It can also mix a live video signal with the Amiga video output – genlocking.

These two functions have, until now, needed two separate boxes. SuperPic is the first product to have both – and it's British.

Most of the clever stuff in the hardware sits inside an Application specific integrated circuit (ASIC). Once more than 100 separate chips, this inch square blob of plastic-coated crunchy silicon controls everything else and explains how SuperPic can do so much in such a small box.

The ASIC tells the chips that convert the video signal into a digital form when to start and then works out what to do with the result. It controls the way the computer gets at the final picture, keeps the memory (192k, expandable to 512k) in order, as well as numerous other housekeeping bits.

By setting up addresses while reading data, instead of keeping the two operations separate, it manages to get fast performance out of cheap, fairly slow – for video – ram chips.

There are two circuit boards in the SuperPic, the digitiser and the genlock. These are connected by cables – when I got the unit, one of these had become unplugged in transit and I had to open the box to fix it, but the boards have been redesigned since.

The circuitry sits in a beige metal

## captured

Video cameramen lust after digitisers and genlocks for their Amigas. Rupert Goodwins looks at a box which has the features of both

box of sturdy construction, as wide as this magazine is tall and about two-thirds as deep. This is designed to sit on top of an A500. Another lead goes from the SuperPic to the parallel printer port on the back of the Amiga. There's no through printer port, so you'll have to unplug it if you want to commit anything to paper. Shame.

IDEO output is from either an Amiga-style D-type socket (RGB and others) or a phono socket (composite colour PAL, as digested by video recorders). Video input is through another phono socket, this time mounted on the front panel. Also on the front panel are controls – two buttons, one to switch genlock on and off and one to toggle between colour and monochrome display.

Five knobs control what the monitor displays, the brightness, contrast, colour saturation and the hue. This last only works with American NTSC systems. Europe's PAL TV is more advanced, and gets hue right automatically. The monitor can display the computer output, the video input and the product of the digitiser.

Plug the SuperPic's power supply into the back of the unit – there's no on/off switch, but nothing gets too warm if left on for days – and the LED glows. Then the Amiga can be switched on, and everything works as before.

SuperPic doesn't do anything until the software's loaded, unlike some simpler genlocks. The software was version 1.9, and this, like the manual, is in a state of not-quite-finishedness. Some features remain to be implemented, and I had several crashes over two weeks of testing. It needs at least a megabyte of memory, a limitation unlikely to be removed in version 2.0.

There's only one screen in the software and this normally displays the currently digitised picture. The menu bar along the top of the screen provides access to the rest of the controls for the SuperPic. The first item is the Project menu. Several pictures can be held at a time using slots.

Save and Save Format store pictures and choose whether to save in IFF, compressed or raw format, Open loads a picture in from disc, Title Bar and Mouse Pointer turn off their respective bits of screen – useful for recording a picture on video – and Screen Format chooses interlace and overscan. It also sets the size of the picture to be digitised. About tells you how much free memory there is, and Quit quits.

The next menu is Picture. This is where it starts to get interesting. Freeze stops the digitiser and leaves a still picture in the framestore memory of the SuperPic itself. Import takes that picture, or even a moving one, translates it and imports it into the Amiga's memory. How long this takes depends on the screen mode; the higher the resolution and the more colours, the longer the process will take. But it's never more than a few seconds.

Clear clears the screen; Upload takes a picture from the Amiga and passes it back to the framestore. Set Frame reduces the size of picture over which operations work; this reduces the memory requirements and speeds things up.

JCL recommends that if you think you need more memory to improve the picture quality you try some experiments on a reduced frame first. This lets you know exactly what the pictures will look like without you having to sell your soul for more ram.

Grey scale, the final option, produces a test pattern to help set things up.

Next along is Tools, a set of special effect routines which do things to the picture. These only work in monochrome mode, since JCL considered the extra time and ram needed to get them functional in colour wasn't worth the benefits gained. Still, you can artificially enhance or suppress the contrast, trace out object edges, quantise pictures, check on the white/dark balance and so on.

UANTISATION is a method of changing the picture resolution; the effect is to make the image far more blocky. You may remember that the Eurovision Song Contest made a lot of use of such an effect this year. Then again, people have joined the Foreign Legion just to forget Eurovision Song contests.

Other commands, like Clip and Threshold, set the limits of brightness within which the picture displays – 10 minutes playing with these tools and it becomes obvious what they're doing, why they're doing it and when you last saw the effect on a Chart Show video.

The last menu is Options. At the moment, it would be better described as Option, since all you can do from it is set the number of multiple exposures you want layered on top of each other. This is an analogue of the old photographer's trick of taking a picture, changing the scene and reexposing the film. Static pictures can be much improved with this.

This is good, because one side effect of the SuperPic is that it makes all the little faults of a video picture all too plain. Most people are happy with their TV picture because it's constantly changing and difficult to analyse for imperfections. Look closely and you will see solid colours become mottled, small areas of bright colour are smeared, images have ghosts, all manner of subtle horrors. And SuperPic will capture these with alacrity.

Still, it's a good idea to get used to SuperPic on TV signals – most easily imported into the digitiser from the Video Out socket on your VCR. Such scenes are well-lit with a good colour balance, after all, that's what TV

companies pay their engineers to assure.

Only then try and capture pictures from your home movies or camcorder; deficiencies in lighting which go unnoticed normally make for really awful digitised pictures. If nothing else, SuperPic can improve your camera technique.

ENLOCK is a totally separate feature from the digitising functions. In order to enable it, some software has to be run; this makes one of the Amiga colours show live video. This is the colour that is used for the backdrop of the desktop. producing an effect of the windows floating over Terry Wogan's head. Those prone to childish delight (guilty, m'lud) can draw false moustaches, halos or silly captions.

The works.

In use, SuperPic is fun, but the software isn't finished, and it shows. The choice of colours isn't as good as that with Digiview. The various effects available by changing the screen mode are interesting; here the occasional crash, picture corruption and vanishing menu bar were noticed. In particular, the software contains no checks that you're driving the hardware too fast.

As exciting as the current capabilities of the SuperPic are, it's clear that the hardware is capable. without modification, of many more tricks than it currently exhibits.

It could do timelapse, where a picture is sampled once every minute or longer. It could do rapid-fire digitising, where 20 consecutive pictures are taken and stuffed into ram. There are whole sets of video special effects - bouncing boxes with pictures in, flips, fades, you name it just waiting for the small matter of the appropriate software.

## REPORT CARD

SuperPic Precision Distribution 01-330 7166 £573.85

EASE OF USE..... The short cable is a pain but otherwise SuperPic is simple to set up.

SOFTWARE ..... The early software is a little buggy and not capable of producing the results you would get with NewTek's DigiView III software.

SPEED..... Images can be grabbed instantly. Parallel connection to the Amiga makes downloading quite quick.

VALUE ..... SuperPic is an expensive toy. But to get something which does as much makes it a bargain for video buffs.

OVERALL

Desktop Video is the Amiga's forte. SuperPic makes it easy to exploit and may well sell Amigas to TV studios.







33 Ormskirk Road, Preston, PR1 2QP. Open Mon. - Sat. 9:30 am to 5:00 pm Dealer enquiries welcome.

## TO SHOP ELSEWHERE LOOK AT THESE

## Amiga Upgrade Boards

512 K RAM Extension Boards

\* Available with or without calendar/clock. \* Plugs easily into ASOO a Available with or witch provided to switch RAM in / out. \* Battery on switch off. \* Assazing to w sily into A500 slot ut. " Battery

ith clock. ithout clock

£17.99 £29.99 £107.99 £119.99

## Repair Centre

Our Trained Engineers can repair all hardware including Amigas in minimum time at competetive rates. We can arrange pickup for prompt delivery to ourselves for £11.50. Next day courier return £8.00.

## Software

At Least 20% discount off all 16 bit game software

E.G. RRP Our Price £19.99 £15.99 £24.00 £19.99 £29.99 £2300 Maximum Discount £19.99 £6.99

Phone for best prices, SAE for catalogue Free delivery (M for orders under £40 add £2.50.

## New Low Price Quality Disks

All our disks are top quality Sony, Maxcell or Kao products, not che imports. All disks carry an uncondition nal lifetime

3.5" D/S Quantity 5.25" D/S Q/D 96 TPI 10 10+box £8.99 £9.99 £6.50 £7.50 100 £79.99 100+box £82,99 £65 Sony Branded 3.5" D/S Boxed x 10 £10 Sony Branded 3.5" D/S Boxed x 100 £99

## Peripherals

Traker ball acts as mouse £24.99 DCOM Auto fire joystick £9.99 Antistatic mouse mats £5.99

## New Low Price Printers

Star LC 10 Star LC 10 Colour Star LC 24/10 Epson LQ 500 Citizen 120 D

Phone for oth



## Amiga drives

£24.99

Vortex 40MB(ST & Amiga) Supra 30 MB (Amiga) Third Coast 65 MB (Amiga) 1 Mg floppy, disable switch and through port. Triangle & others

£79.99

£9.99



## Monitors

rs, deduct £10 if bought with Computer phone 's. All monitors come with scart to Amaga etc.



£369.99 Amiga A500 computer, Tenstar pack of t Amiga A500 computer, 512 K RAM Extension . Tonck, Mouse. PACK 2

Great Value Amiga Packs PACK 2 with Clock
PACK 3 = PACK 1 + CM8833 Col. Mon
PACK 4 = PACK 2 + CM8833 Col. Mon
PACK 4 with clock £479.99 £579.99 £687.99 £699.99



203166 or 21474 Fax 27236



## MicroBotics means Amiga<sup>™</sup>-Power!

Whichever Amiga you own - or plan to buy - we have the expansion you need

For the

Amiga 2000...

## HardFrame/2000

DMA SCSI Interface

If your application calls for super-speed uninterrupted access to your hard disk, HardFrame/2000 is your answer. This is a high end, no holds barred SCSI interface that operates at bus speeds. One HardFrame/2000 can support up to seven devices. Word-length data transfer, FIFO buffering, TRUE DMA, mounted on a metal frame suitable for all standard 3.5" SCSI drives (or, if you prefer, connected to a bay mounted or external disk). Available now.

Suggested List Price: £219.95

## 8-UP! FastRAM

Maximum Memory in One Slot!

The FastRAM card that every Amiga owner will eventually come to - why limit yourself to only two megabytes per slot? 8-UP! will take you all the way to the top of the auto-configuration memory space of EIGHT MEGA-BYTES! 8-UP! is available in two versions, the standard DIP model accepts 2, 4, 6 or 8 megabytes of 1 meg DRAMS. For maximum flexibility there is the SIMM version which lets you custom configure with mixed 256k and 1 meg SIMM modules, including MicroBotics exclusive PopSIMMS.8-UP! is a power-efficient, zero wait state, autoconfiguring design. "The latest and greatest" (Amiga World, Jan. 1989). 8-UP! is available now.

Suggested List Price: £149

## MouseTime

The easiest to use, most cost-effective implementation of a battery backed clock for the A1000. Passes the port through for joysticks or other devices. Complete with WorkBench software. Available now.

Suggested List Price: £25

For the

Amiga 500...

## M501 Memory + Clock

Half a Meg at a Great Price!

As we are all coming to realise, a one megabyte Amiga (at least) is a necessity not an option. When you add the inboard 512k memory and clock module to your A500 make sure it's a MicroBotics M501. Note that just like the Commodore and unlike some third party expansions, we use a long lived rechargeable NiCad battery - which you'll never have to replace. Set the MicroBotics clock using the same WorkBench software as you would use for the Commodore clock. What's the difference? You get to keep £25 compared to the Commodore version. The M501 is available now.

Suggested List Price: £124.95

## StarBoard2/500

Two Megs PLUS a Choice of Modules

The premier memory expansion for the A1000 is now available on the A500. In it's own case with an independent power supply strong enough to handle StarBoard2 and a second A1000 style StarBoard2, all the power and flexibility of this great expansion device is available to you. Up to 2 megabytes of autoconfiguring, zero wait state FastRAM, MultiFunction or SCSI module capability for math chip or fast SCSI hard disk interfacing. StarBoard2 also has an LED diagnostic/confidence light to indicate the power-up state of your Amiga and expansion. An A1000 style StarBoard2 can be connected to the bus pass-up for a total of FOUR megs and two modules. "The best ..." (Amiga World,

Suggested List Price: £199



For the

Amiga 1000...

## StarBoard2

The Expansion of Choice

The superb memory expansion for the Amiga 1000, still going strong! Up to 2 megabytes of autoconfiguring, zero wait state, FastRAM in a sleek, all steel Amiga coloured case plus the capability to accept either of the two daughter-board modules, the original Multi-Function Module or the new SCSI Module. StarBoard2 is powered by the bus (up to two StarBoard2's can be supported by the A1000) and passes it on.

Suggested List Price: £199

## MultiFunction Module

High Tech at Low Price

This daughterboard installs on any StarBoard2. It features a socket and software for the 68881 Math Chip as an I/O device (MicroBotics pioneered this approach on the Amiga - now directly supported in the maths libraries of AmigaDOS 1.3). Sticky Disk gives you the most "bullet-proof" rebootable RAM disk - its hardware protection turns it into a solid state, superfast disk. Parity checking of StarBoard2 RAM can be enabled when extra parity ram is installed. Finally, the MultiFunction Module carries an easy to use battery-backed clock to set the system time on startup.

Suggested List Price: £55

## StarDrive SCSI Module

Fast, Low Cost SCSI Module

When installed in any model Star-Board2, StarDrive offers you cost effective, pseudo-DMA access to SCSI hard drives and other devices. Fast, easy to install including driver software and disk diagnostics. StarDrive also includes a battery backed clock to set system time on startup.

Suggested List Price: £75

Tell your dealer he can order direct – no minimum quantity – show him this ad! In Europe: Oasis Services Ltd., 17 Andrews Place, London SE9 2SJ. TEL: (01) 859 4936 In U.S.A.: MicroBotics, Inc., 8111 Alpha Drive, Richardson TX 75081. TEL: (214) 437 5330

## astle oftware Now taken

COME TO THE PROFESSIONALS!!!!

2 Williams Clowes Street Burslem Stoke on Trent ST6 3AP

Tel: 0782 575043

VISA

## **AMIGA** REDUCTIONS

Manhunter in New York.	.29.95	12.95
King of Chicago	.29.95	8.95
Battletech	.29.95	14.95
Running Man	.24.95	9.95
Thunderbirds	.24.95	14.95
Peter Beardsleys Footbal	124.95	7.95
Pacland	.24.95	7.95
Gold Rush	.29.95	12.95

## Kings Quest I, II and III RRP £79.85 Our Price £12.95

Leisure Suit Larry 1       24.95         Police Quest 1       24.95         Nigel Mansells G Prix       24.95         After Burner       24.95         Roger Rabbit       29.95         Krystal       29.95         Fioneer Plague       24.95         Football Manager II       19.95         Vindicators       24.95         Xybots       24.95         Fire Power       24.95         Tracers       24.95         Ebon Star       24.95         Galactic Invasion       24.95         Action Service       24.95         Thexder       24.95         Strip Poker 2+       24.95         Marias Xmas Box       24.95         Space Quest 1       24.95         Space Quest 2       24.95         Real Ghostbusters       24.95         Robbeary       24.95         W. Class Leaderboard       9.95         Marble Madness       24.95         Outrun       19.95         Archon Collection       24.95         Incred. Shrinking Sphere 24.95         Indoor Sports       24.95         Summer Olympiad       24.95         Armageddon Man <th>12.95 5.95 7.95 7.95 12.95 4.99 9.95 15.95 6.95 3.99 3.99 3.99 7.95 5.95 7.50 7.50 7.50 7.50 7.50 7.50 7.50 7.5</th>	12.95 5.95 7.95 7.95 12.95 4.99 9.95 15.95 6.95 3.99 3.99 3.99 7.95 5.95 7.50 7.50 7.50 7.50 7.50 7.50 7.50 7.5
Winter Olympiad24.95	5.95
Armageddon Man24.95	3.99
GFL Baseball29.95	4.99
GFL Basketball29.95	
World Tour Golf24.95 Mini Golf19.95	

## **AMIGA SPECIAL OFFERS**

Wicked	24.95	9.95
R Type	24.95	9.95
Time Scanner		
IK+	24.95	9.95
Millenium 2.2	24.95	12.95
Dominator	24.95	12.95
Running Man	24.95	9.95
Lombard Rally	24.95	14.95
Deluxe Paint 3	79.95	54.95
Teenage Queen	24.95	.95
Hostages		
Leather Goddess	29.95	6.99

## **Precious Metal**

Xenon, Crazy Cars, Captain Blood, Arcanoid 2 £17.95

Nord & Bert29.95	6.99
Sherlock29.95	
Bureaucracy29.95	6.99
Plundered Hearts29.95	6.99
Hint Books for the above	
only £2.99 each	
Scorpion24.95	15.99
Deja Vu29.95	8.99
Wanted19.95	4.99
Billiard Sim24.95	
Division 119.95	5.99
Stargoose 19.95	4.99
Stargoose	12.99
Fun School 2 8-1224.95	12.99
Fun School 2 over 12's 24.95	12.99
Dungeon Master (1 meg) 24.95	15.95
Elite24.95	15.95
Hellfire Attack24.95	3.99
Falcon Mission Discs each19.95	13.95
Bloodwytch24.95	15.99
Let Sleeping Gods Lie 24.95	15.99
Kult24.95	15.99
Chariots of Wrath24.95	15.99
New Zealand Story24.95	16.99
Red Heat24.95	16.99
Robo Cop24.95	16.99
B - :	

Proprietors FA and RA Beech

## AMIGA SPECIAL OFFERS

War in Middle Earth	.24.95	14.99
Hawkeye	.19.95	13.95
Populus		17.95
Phobia		15.99
Forgotten Worlds	.19.95	14.95
3D Pool		13.95
Steve Davis Snooker		15.99
Pirates	.24.95	10.55000000000
Honda RVF	.24.95	15.99
Balance of Power 1990		15.99
Weird Dreams		15.99
Lords of Rising Sun	.29.95	20.99
Legend		11.95
Bards Tale 2		16.95
Silkworm		12.99
Millenium 2.2		15.99
Skweek		
Rocket Ranger	.29.95	17.95
Photon Paint (no box!)		
just disc manual + disc		
instructions	.79.95	19.95

For 1 month only:

## **FAERY TALE ADVENTURE**

RRP £44.95 To clear only £7.95

Virus Killer for the Amiga as endorsed by Commodore themselves ONLY £7.95

We offer a fast reliable service Cheque's P.O's to:

## CASTLE SOFTWARE

Any games not listed phone our Hotline now on 0782 575043

NE of the great things about AmigaDos is that it has lent theology a whole new dimension: "How can a God exist, if something as obviously evil as AmigaDos has been created?"

et

.95

.95

.95

.95

.99

.99

.99

.99

99

.95

95

.99

99

99

.95

The debate is still going strong in religious circles, while Dr Tim King, the creator of the beast, has gone to do better things. He is currently writing an operating system for parallel machine – pay attention, it's the only warning you're likely to get – as a study in machocism.

Fortunately there are a number of serious design flaws in AmigaDos, things that actually make life a bit easier for the poor soul on the wrong side of the screen, and the subject of this article, devices, happens to be one of them.

AmigaDos is the best operating system for under £10,000 when it comes to handling devices. But what are devices? Well, they are anything you can possibly hook on your Amiga with which you'd like to exchange data – disc drives, hard discs, atomic clocks and the odd printer.

But they don't have to be hardware. A device can be purely software, and examples of this are the resetproof ram disc and SPEAK: in Workbench 1.3.

Talking about Workbench 1.3, let's have a tour around the new devices introduced to Amigaoids with this upgrade.

Five new devices were brought in: AUX: PIPE: SPEAK: RAD: and a new improved console device which deals with keyboard input and text output to the screen called NEWCON:.

Before you can use any of them, you have to issue a CLI command called Mount to tell the Amiga to load the bit of program to control the device. To Mount the SPEAK: device just enter the command:

MOUNT SPEAK:

In this barrel of apples, AUX: is the rotten one, or at least the least interesting. This device provides "unbuffered communication with the serial port", which means it does the same as SER:, the "old" serial device. It just sends the data to the serial port right away while SER: waits until it has a bunch of data to send down the line.

Unbuffered communication is an advantage if

you want to hook a second computer to your Amiga and create a simple multi-

user machine like the big mainframes the boys at university play around with. Try hooking another computer with your Amiga and issue the command NewCLI AUX:.

Now you should, with a proper comms program at the other end, be able to run CLI based programs on the "terminal". Remember, no fancy stuff will work here, no windows, screens, clever graphics nor sound – just pure text. This feature could prove very useful if you run some important software on your Amiga while you're away from it. Just call up via a modem and

a portable and check what is happening. Perhaps AUX: is not so boring after all.

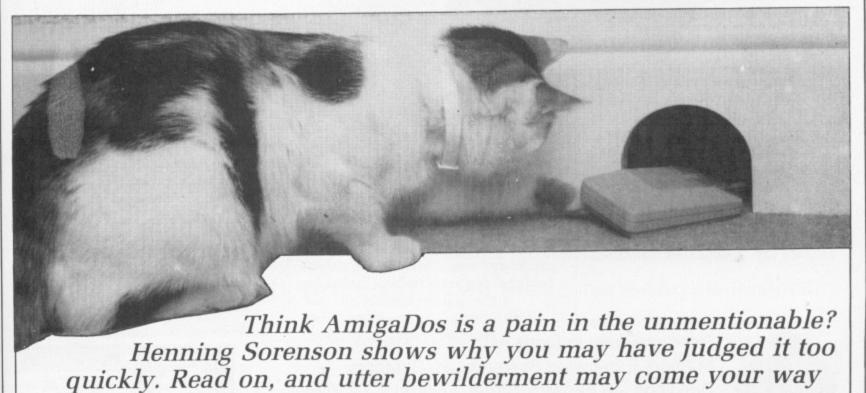
UST to clear up any misunderstandings, when discussing PIPE: we are not talking about subtle suicide kind-of-pipe you stick in your mouth, but rather the kind you stuff into the ground and pour water through.

With PIPE: you lay down a pipe from one program to another, pouring data through it, or in programmer terms: Make the standard output of

Amigabos

the big mainframes ity play around another computer and issue the AUX:.

with a proper the other end, be red programs on member, no fancy e, no windows, onics nor sound—feature could for your run some on your e away from a modem and considered the considered from the consider



## HALF MEG UPGRADE

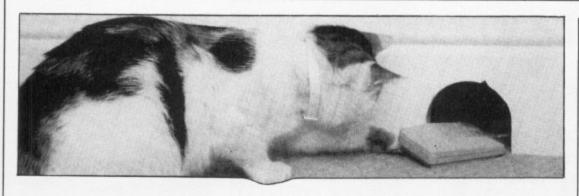
The 512 k card from memory expansion systems is probably the cheapest way to expand your A500. M.E.S. have used the latest el Dkeep costs down without high capacity dyr nic z ugs into the expansion slot compromising qu underneath the k memory 'on/off' switch. systems is probabl M.E.S. have used keep costs down hout into the expansion : useful expansion memory 'on st way to memory expansion systems i gh capacity expand your A506 compromising dynamic rams to underneath the memory 'on/off' ansion systems is SW 500. M.E.S. have used proba help keep costs down the late plugs into the expansion without c ures a useful expansion slot underr from memory expansion to expand your A500. systems is proba high apacity dynamic rams to help M.E.S. have used th keep costs down without compromising quality. The card plugs into the expansion slot underneath the keyboard, and features a useful expansion memory 'on/off' switch. The 512 k card from memory expansion systems is probably the cheapest way to



Send cheques to:Dept AC Memory Expansion Systems Ltd. Britannia Buildings, 46 Fenwick Street, Liverpool. L2 7NB







one program the standard input of another.

In lay-Amigaoid terms that means this will not work with anything more graphical than the letter Q, just like AUX:. What it does is take what the CLI command DIR writes on the screen and pass it as input to some other program.

Even though this is useful in something like Unix on a huge multiuser mainframe where it has been around all the time and is implemented with Ts, valves, pumps and other goodies to make it utterly confusing to the casual user (there are no casual Unix users, they all killed themselves in a fit of depression), it isn't really all that hot on the Amy because nothing is written to take advantage of it.

An example of its use could be a program which is doing heavy calculation and outputing the results as it goes. You have got a second program which will take data in the format the first program outputs it, and make it into a beautiful graph on your plotter.

Instead of waiting for the numbercruncher to finish, you can make the output of the numbercruncher the input of the graph plotter, and the graph will be made on the fly and you will save some time. Neat eh? Of course this is very unlikely on the Amiga. We have the graph output on-screen in a flash and print it out equally fast.

Pipes are most useful on text-only machines, not on graphical whizzboxes like the Amiga. If you can find a use for it, here is how it works:

dir >PIPE:NAME
type <PIPE:NAME</pre>

Quite a stupid example, I agree, but it illustrates how it works. The greater-than symbol > is the standard output redirection symbol. In the first command we redirect the output of DIR to the Pipe device.

The NAME after the colon is to

help us identify the output, and is very useful if you have more than one program redirect its output to Pipe at any one time. As you may have guessed, the < means redirection of standard input, so now Type takes the output of DIR and prints it on screen.

You can try to open another CLI window with the New CLI command, first entering the Type command in one window, and then enter the DIR command afterwards in the other window. Notice how Type waits until you execute the DIR command. This is one point where Pipe differs from simply redirecting the output to a file. In the case of Pipe, the receiving program will not abort if there is no input ready for it, but wait a while before doing so. This means that you can use Pipe to transfer information between CLI tasks without worrying whether the data is ready.

F you read my piece on the Amiga Workbench (July 1989) you know how I feel about computer speech. Thanks to the really clever people at Softvoice this will be vastly improved with Workbench 1.4. However opposed to computer speech I may be, I must admit it can be used for something other than impressing you girlfriend-to-be. You use it with redirection just like Pipe. Try to execute the command:

echo >speak: "Hi frods, said Zaiphod"

Get the point? By the way, the "i" in Zaphod is just to make it sound better, my spelling may be lousy, but I never forget a intergalatic president's name.

You could use this in script files to give the operator some audio feedback, for example when the Amiga has finished a time consuming operation, or if an error has occurred. You can make it speak a whole document if you wish just by using the Copy or Type command:

type mydoc.letter to speak:

will read mydoc.letter; great if you

have poor eyesight, I guess.

There are a couple of parameters it'll be useful to know if you want to use SPEAK:. The syntax is like this:

type mydoc.letter to speak:opt/

after the opt/ follows the options, each separated with a forward slash (/). The options are :

M : Use male voice F : Use female voice R : Use robot voice N : Natural speech

O0 : Do not allow options in the input

O1 : Do allow options in the input text

A0 : English input A1 : Phoneme input

Pn: Pitch setting (n is a number from 65 to 320)

Sn: Speed setting (n is a number from 30 to 400)

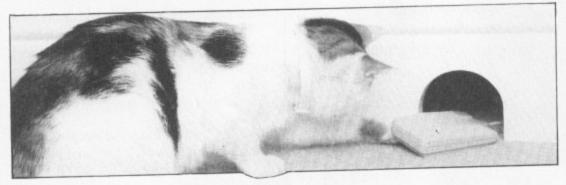
As you can see, these options are not much different from the ones in the Say demo. The options with more than one setting (O and A) default to the 0 setting. As you may deduct from the above (well done indeed Watson!), you can have the options in the text as well. Just add the option lines in your text file like this:

opt/m/s170/p150
Marvin rolled up beside Arthur and said:
opt/r/s140/p120
Life. Don't talk to me about life.
opt/f/s180/p250
Stick it up your nose Marvin
opt/m/s170/p150
said Trillian

OU are probably already acquainted with NEWCON.
This little number gives you command line editing and history.
One of the things that made
AmigaDos unbearable in the past was the lack of these very features, and now they are here. To take advantage of NEWCON: when you start a new CLI from the CLI supply these additional parameters:

NEWCLI NEWCON: x/y/width/height/Name

where xpos is the x position of the window with the origin being the upper left corner of the screen, width the width and so forth. Name is a bit



special: If you want spaces in the name, do remember to put the whole string in quotes like this :

NEWCLI "NEWCON:0/0/640/256/Where's my towel ?"

This will give you a pretty nice CLI window which will fill all of the screen.

Saving the best for desert, here, ladies and gentlemen, is RAD, the reset-proof ram disc. This is a great little bag of tricks, and even though a work-a-like has been available in the public domain for a long while as have most of the other "new" devices, it is nice to see it being made available to others than Amigaoids-at-heart.

RAD is a bit more difficult to work with than the usual ram disc. For one thing, you have to mount it, which isn't a great bother, but it isn't dynamic, meaning using no more ram than it absolutely has to.

Also it works more like a disc drive, hogging a bit of your memory and sitting on it forever, reporting disc full if you try to cram more in. This means you have to know just how much you are likely to use before you mount it.

Don't be overly optimistic about you requirements, since it steals memory in which you could otherwise run programs. This is a fine balancing act.

Assuming you have figured out how much memory you are likely to use on RAD:, find your favourite editor and have a look at the file called MountList in the devs directory.

This is where all the clever bits are, and since Amigaoids are smarter than average (you bought the machine didn't you?), you have probably already figured out that the capitalised names with the colons on the left-hand side are the names of the

devices, and the indented text after them is information to help AmigaDos figure out what to do about them when you try to mount them.

You shouldn't pay too much attention to MountList values, since they are only of interest to AmigaDos and your average low level machine code hacker. Included in the information is the full name of the device – to be used when they are opened from within a program – stacksize, memory (and memory type) to be allocated for buffers, and, for the disc devices, the size, interleave and various other bits and pieces. If you locate RAD: in the MountList you'll see something like figure I.

This set RAD: up to act as closely as possible to a real disc drive. The figure to juggle if you want to change the size of RAD: is HiCyl. As you can see, my RAD: is set up to with 21 cylinders, which gives me a total of:

```
(HiCyl - LowCyl + 1) * BlockPerTrack * Surfaces * 512 = (21 - 0 + 1) * 11 * 2 * 512 = 247,808 = 242K
```

bytes used. This is, unfortunately, not what I will have available for data, since AmigaDos hogs some space for itself to hold information on how to figure out which bytes go in which file, checksums and stuff like that.

So depending on how many files I use, how many directories I make and so on, I'll probably have something like 220k available for data. Real life discs suffer the same problem, so even though Commodore claims each

```
RAD: Device = ramdrive.device
Unit = 0
Flags = 0
Surfaces = 2
BlockPerTrack = 11
Reserved = 2
Interleave = 0
LowCyl = 0; HiCyl = 21
Buffers = 5
BufMemType = 1
```

Figure I: MountList entry for the recoverable ram drive.

disc holds 880k of data, remember it is *raw* data, you'll be lucky if you can cram 800k on to it.

If you want to fool around with RAD:, I suggest you only change the HiCyl value, and leave the others alone, since there isn't really any point in changing the BlockPerTrack or Surfaces variables other than mess around and make a pig's dinner of the MountList.

If you sit around and think: "This is all very well, but what is it to me?" you obviously haven't thought about how RAD: can change your life and let you get on to doing the clever bits instead of watching the drive light flick on and off.

Single drive users will have a field day putting the most used commands from the C directory into RAD: which will give them the opportunity to mess around on other discs without having to be disc jockeys. And if you have a lot of ram, consider stuffing a complete Workbench into RAD: when you turn your computer on in the morning, and just working from ram the rest of the day, leaving your drives free for better things.

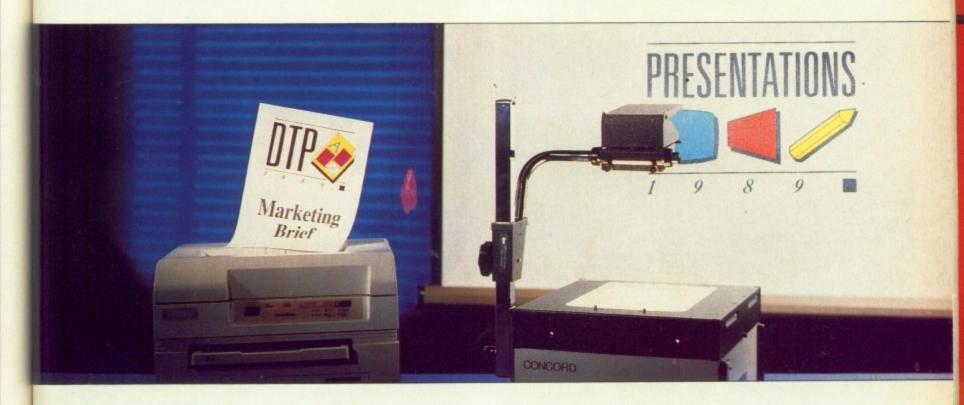
This is especially useful if you have KickStart 1.3 which will let you boot off ram, making startup-sequence fly like never before. Programmers can save hours of development time by keeping essential bits like the C include files in RAD:, so they don't have to wait a week and a day for the machine to boot when the chart-topping game-to-be crashed for the umpteenth time.

THE quick tour I have given here may suggest devices are very powerful, but it is only when you build and have to interface some hardware of your own to the Amiga, you'll realise just how powerful the concept really is.

Devices let you communicate with stuff in a completely standard way which makes it ridiculously easy to attach hard discs, optical discs, rom discs, other computers and things never dreamt about by the designers of our own little favourite machine.

It will go beyond the scope of this article to plunge into the depths of just how to write that important bit of code to control the device, but interested parties should read the ROM Kernal Reference Manual: Libraries and Devices for a complete example of a do-nothing device.

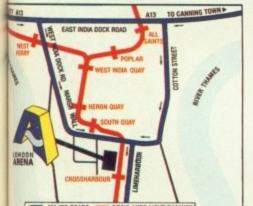
## FIRST IMPRESSIONS COUNT



VERYTHING you need to know about making a better impression – written or visual – is on display under one roof at the International Desktop and Professional Publishing Show and its new partner, Presentations '89. If you're an expert this is where you'll find all the latest hardware and software. If you're just starting out you'll find all the help you need to make the right purchasing decisions first time round. And it's all happening at the exciting new London Arena in the heart of London's Docklands.



LONDON ARENA OCTOBER 4-6, 1989



## At DTP '89 you'll find:

- All the major hardware, software and service suppliers
- A two-day conference on The Changing Face of Desktop Publishing
- Daily seminars on the practicalities of desktop publishing what to look for and how to decide what's best for you
- The Pira desktop publishing clinic
- Help and advice from DTP user groups

## At PRESENTATIONS '89 you'll find:

- The latest graphics and presentation systems
- Audio-visual and data projection hardware
- Slide production and reprographic services
- Daily seminars on improving communications skills, do-it-yourself presentations, and state-of-the-art techniques

'89 and Presentations '89
Information on conference and

Entry details for the 1989 Desk top Publishing Awards

seminar programmes

The full range of everyday presentation tools, from flip charts to marker pens



Name	
Company	
Address	
	Postcode

DATABASE EXHIBITIONS

Complete this coupon or phone the ticket hotline on

0203 470075 to obtain your pre-registration tickets

and reserve your FREE copy of the 1990 Desktop Pub-

Please send me: \_\_\_\_ Advance registration(s) for DTP

lishing and Presentations Yearbook (worth £20).

Send to: The International Desktop Publishing Show, Data House, Curriers Close, Tile Hill, Coventry CV4 8QQ.

## THE ACTION OFFICE

See DTP and presentations in action in a working office environment

The Amiga that thinks

Already capable of emulating an IBM, a BBC and have a good stab at reading C64 data, the Amiga can now play at being the sexiest business computer. Rupert Goodwins takes a bite of the Apple

## it's a Mac

HOW can you make a Macintosh? Apple would much rather you didn't; if you're a clone manufacturer you can be sure that the Californiakids will make this perfectly clear. However, Apple can't do much about people buying Amigas, and neither can it unleash the lawyers on anyone selling small boxes that look more like StarTrek phasors than a working Macintosh.

And if that box just happens to turn your Amiga into a Macintosh, then everyone's happy (except Apple).

A-Max, from ReadySoft Inc, is just such a box. Theory says that for £130 and a couple of standard Apple spare parts it will connect to your £400 Amiga and the poshest software on the block can be yours. Life is rarely this simple: The road to Macintosh compatibility is sprinkled with pitfalls.

The first hole is availability of Apple roms. These are the spare parts that A-Max needs; they're chips containing all the information the computer needs to work the disc trives, speak to the screen and run applications programs much like Kickstart in your Amiga. They are the heart of the Macintosh.

A-Max can use roms designed for the original Macintosh 128 and 512 The 64k roms, or the 128k parts found in the Macintosh Plus. It cannot use any of the more recent roms. For the review, I extracted a pair of chips from an unsuspecting Plus. The smaller roms are limited to older software and can't support the newer systems. The price of either set is variable, but is normally around £50.

NSTALLATION is a 10 minute job. Unscrew the A-Max case – a small, arey box with the signatures of the designers on the inside (like the original Macintosh; is this taking compatibility to ridiculous extremes?).

Once the case is open, the roms are plugged into a pair of empty sockets. Some care is needed to avoid the dreaded bent pin. That done, the A-Max unit can be plugged into the Amiga's external disc drive port or into the back of a disc drive with a through socket. But don't switch on yet.

Although the Amiga has the same physical type of disc as the Macintosh – double sided, double density 3.5in – the way that the information is stored is different. Apple decided to use an odd format that marginally increases the amount of data a disc can hold, but at the expense of needing special disc drives. As a result, the standard drives found in an Amiga – and IBM, ST, BBC – in short, everyone else's computer – can't fully read a Macintosh disc. A-Max has taken two approaches to solve this dilemma.

First, there's a socket on the side of the computer which accepts an Apple standard external disc drive. This is the best option, since it means that the computer can read and write proper Macintosh discs without more ado.

The second option is to produce a "special" system disc on your Macintosh with only 270k of system program and data. This can be read by the Amiga's built-in disc drive, and is just enough space to fit a very basic system with no frills.

When the Amiga is first turned on it behaves exactly as before. It can run all Amiga software, including games and utilities, as if A-Max wasn't there. A special program has to be run to start the emulator.

First it lets the user choose various options such as screen size, printer ports and the amount of memory to give the pseudo Macintosh.

All these things need to be set up because, at heart, the Amiga is very different from a Macintosh. For starters, the Macintosh screen is 512 x 384 pixels in size; the Amiga can display up to 640 x 512 with interlace flicker. This gives a much bigger screen area, however since the Amiga normally shows 640 x 256 pixel screens there are options to display part of the Macintosh screen and reveal the hidden part when the mouse moves towards it.

There are also options for the Moniterm screen reviewed in the April issue, which will display up to 1008x800 pixels. All this is, alas, in monochrome – the Amiga's colour capabilities are not used by A-Max.

Finally, the internal addressing of ram – where the computer finds memory, and where it finds empty space – is different between the Macintosh and the Amiga. Normally, this won't matter, except that the system will report far more ram than is actually present.

I tested A-Max on a 1 meg Amiga, 800k of which was available to the Macintosh emulator. The manual warns that some software might not be able cope with the differences, and for this reason the amount of memory can be limited to 512k of completely compatible ram.

The preferred settings can be saved to (Amiga) disc, and then the final step taken. With a click of the mouse, the emulator is started. It spends the first 20 or 30 seconds copying the software from the roms on the A-Max board into the Amiga's memory. Then the familiar *Welcome to Macintosh* screen appears, followed by the Macintosh Desktop.

To the Amiga user, the Macintosh Desktop will appear familiar enough to immediately use most programs. Both the Amiga and the Macintosh start programs off by double-clicking on a program or data icon, both have windows that can be moved around the screen and resized, and both have a trashcan for the removal of old data.

The Macintosh has no CLI, which is one reason for the considerable culture shock that hits an Amiga owner when first confronted by a •

Macintosh. But the programs are very similar – there's a very strong family resemblance between the standard Macintosh and standard Amiga user interfaces, with a menu bar along the top, pull-down lists of commands and keyboard short cuts. The lack of multi-tasking makes you wonder why all Mac owners have not migrated to the Amiga.

The keyboard is another area where the Macintosh and Amiga differ. The Macintosh has various special keys, most notably Option and Command, which A-Max replaces with Alt and Amiga. The standard Macintosh system software comes with a utility called KeyCaps – this displays the keyboard and all the active keys, and is very useful for finding the many obscure symbols in the wide range of Macintosh fonts.

Someone has thought about using the system. There are various other nice touches. If you've selected less than the full amount of Amiga ram for the Macintosh when starting up, the spare memory is available as a ram disc. This acts like a very fast floppy, but can survive restarting the emulator. Indeed, if it has the system files copied to it the emulator can reboot from this ram disc and thus get going with a fair deal of speed.

More disc dabbling comes from another difference between the Amiga

## COMMUNICATING

PRINTERS are complicated, because the Macintosh has no parallel printer port and A-Max has some translation software. This works with the normal 9 or 24 pin Epson-compatible printers that inhabit the non-Macintosh world, or the Apple ImageWriter dot matrix machine.

Due to hardware limitations, A-Max can't talk to any AppleTalk device or participate in any Apple network. A special sequence diverts any output that would normally go to a PostScript laser printer – such as a LaserWriter – to a disc file that can subsequently be taken to a proper Macintosh and printed.

and Macintosh hardware. Macintosh drives don't have a disc eject button; instead, they have a motor which shoves the floppy out under computer control. Since the Macintosh has such complete control over disc changes, the system software always knows what floppy is present and often doesn't write information to it until the very last minute.

With the Amiga, this mechanism isn't present, unlike the chance to comprehensively mess up a disc by swapping it behind the computer's back. So A-Max flashes little icons on the screen when it wants to eject an Amiga disc – ignore them, and you

lose your data.

When in Macintosh mode, floppies formatted on an Amiga drive will be in a special A-Max format, similar to the Macintosh's but only readable by A-Max. As well as the internal drive and one Macintosh external, up to two more external Amiga floppies can be daisychained on to the back of the A-Max box, and these are available to both operating environments.

A-Max provides various utilities to move data between the Macintosh and Amiga. The cleverest splits a Macintosh disc into three 270k "special" Macintosh discs which can be read on the Amiga drive; these can subsequently be glued back together into one A-Max format floppy.

This is ideal for those with access to a Macintosh and an Amiga but no Apple external floppy disc drive. I imagine that most people will have this configuration. Those with the external drive can copy stuff between the Amiga and Macintosh file systems with another utility.

The final point to note is that the Apple's special sound hardware isn't emulated. In theory, it's just about possible to persuade the Amiga's sample-based sound circuits to eat Apple's words, but I'm not at all surprised that ReadySoft has chosen to forego this can of worms and limits the sound that can be produced to a simple beep.

As the manual states, this will cover most "productivity" software, the sort of program that A-Max is designed to run. In any case, most of the Macintosh software that uses fancy noise is either a music utility or a game. On both counts, the Amiga is so much better than the Macintosh that this really doesn't matter.

The really addictive Macintosh games tend to be strategy-based and will most likely work anyway.

ARIOUS faults were uncovered during testing. One of the most exasperating was the complete refusal of any of the printer emulation stuff to work. Signs of a hastily-shipped product? This impression was heightened by a similar problem with the elderly Apple disc drive I tried to use.

Although the UK distributors weren't clear on the point, a prowl around various US-based bulletin



From hereon in it's all mono



## SUPERDEALS

Sixteen Bit Superdeals from the Sixteen Bit Specialists!

CUSTOMERS PLEASE NOTE! When comparing prices remember ours include fast delivery by courier



## **AMIGA A500 +** 500 AIR MILES £449



Air Miles pack includes everything in our Amiga System 1 pack PLUS:

- Spritz Paint Package
- Disk wallet for 25 disks
- Star Ray
- Who Framed Roger Rabbit
- Nebulus
- Plus 10 other free games worth £230 PLUS 500 free Air Miles, that's enough for a return flight to Paris, Amsterdam, or Brussels.

## EXTERNAL DISK DRIVES

Amiga A1010 1MEG £139.00 Cumana 1MEG £99.95 NEC 1 MEG £89.95

P	RI	N.	TE	RS

FHIMIERS	
Seikosha 80 column NLQ (inc lead)	£139
Seikosha 80 column 24-pin LQ (inc lead)	£279
Star LC10 including interface lead	£199
Star LC10 colour including interface lead	£249
Citizen 120D including interface lead	£159

Amiga A500 System 1 £365.00

Inc Vat and Next Day Delivery

System 1 includes:

- Amiga A500 512K Keyboard with Built-in 1 Megabyte disk drive
- Free TV modulator worth £24.99 allowing you to use the Amiga with a normal TV.

  Amiga BASIC, Amiga EXTRAS 1.3, Workbench 1.3 PLUS the Amiga Step by step Tutorial.
- All leads, manuals PLUS MOUSE and mains plug!

Amiga A500 System 2 £385.00

Amiga A500 System 1 plus over £280 worth of software, comprising 10 games and either Spritz or Photon Paint graphics package

## NEW! AMIGA 1 MEG! £499.00

Announcing the new Amiga 1 meg - an A500 system 1 with fitted 1 megabyte memory expansion and clock card PLUS TV Modulator AND DRAGON'S LAIR a six disk 1 meg megagame!

## AMIGA 1 MEG+ £519.00

Our Amiga 1 meg + also includes the £230 worth of games software normally given with our A500 System 2 Games Pack

## MONITORS

l	£269.00
	£249.00

CREDIT CARD ORDERLINE Tel: 0908 78008 (Mon-Sat 9am - 6pm)

To order either call the order line above with your credit card details OR make a cheque/PO payable to Digicom Computer Services, and send it with your order to the address below. Callers are also most welcome at the address below DIGICOM

Unit 36, Wharfside, Fenny Stratford, MILTON KEYNES MK2 2AZ All prices include VAT and delivery by courier









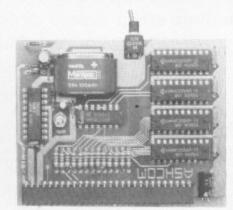
0530 411485



Original ASHCOM RAM Expansion ONLY £89.95

(Limited Stock)

PHILIPS 8833 Colour Monitor ONLY £200.00



All prices include VAT and Delivery. British made Trade Enquiries Welcome 0530 411485

512K RAM Expansion with Clock for Amiga 500 Features:

- ★ RealTime Clock with High Capacity NICAD Battery Backup
- ★ Memory Disable Switch
- ★ Low Power Consumption
- ★ Latest Technology 1MBit RAMS
- ★ Low Chip Count for High Reliability
- ★ Direct Replacement for A501 Expansion

ONLY £99.95

Only from ASHCOM, 10 The Green, Ashby-De-La-Zouch, Leicestershire, LE6 5JU Telephone: (0530) 411485

boards revealed that, yes, the first version of A-Max had many bugs. At the time of writing, the same US sources claimed that various hardware and software changes had been made, and that A-Max was now reasonably bug-free. I was unable to obtain a fully working version in the time available.

Even so, the level of compatibility was impressive. About 80 per cent of the software I tried on A-Max ran as if it were a true Macintosh. Stalwarts like Word and MacPaint were happy, the one main fly in the emulated ointment being the Hypercard database-cum-programming language (apparently now fixed).

The main problem was the lack of memory. The officially sanctioned minimum which Macintosh owners are supposed to have is a full megabyte and this is shortly to rise to two. I couldn't do anything useful with MultiFinder – the Apple version of a multi-tasking operating system – for example. However, Amigas are

expandable like the Macintosh to eight megabytes, all of which would be available to A-Max.

I found that the programs ran noticeably faster, on average, between 10 and 20 per cent. This is for two reasons – the Macintosh isn't a very efficient design and the Amiga runs faster anyway.

I can see A-Max enjoying a rosy future, provided all the bugs are weeded out (and of how many products has that been said?). It will appeal mostly to those with access to a Macintosh already, both because of the file transfer factors and because you've got to get the Macintosh system software from somewhere. Apple's licensing agreement specifically prohibits the use of its stuff on non-Apple computers; however, the legality of such a restriction is doubtful. Most people feel that, provided you're only using the software on one machine at once, the letter and spirit of the law of copyright is being complied with.

However, it works. Mostly. It's probably more useful than any of the

\*\*\*\*\*\*\*\*\*

MSdos emulators, and as the Apple Macintosh becomes more popular, this will become more and more true. The perfect excuse, Macintosh users, for an Amiga at home...

## REPORT CARD

A-Max Readysoft 0268 541126 £134.95

EASE OF USE.......
Hardwarewise a simple plug-in-and-go.
You will need to understand a bit
about the Macintosh.

SPEED......
The Mac is slow, but it is still very, very unusual to find an emulator which runs faster than the native computer.

VALUE ......
Marred by bugs. American users who have seen revisions claim that all the major problems have been fixed.

OVERALL 88%

If the bugs have been fixed add another 5% plus to the score. A unique and

amazing product.

## PUBLIC APOLOGY

M.D. Office Supplies would like to take this opportunity to apologise to all its competitors. We shall with immediate effect supply direct to the public, Computer discs, Storage boxes, etc. AT BELOW WHOLESALE PRICES

## 5.25" DISCS & BOXES

25 5.25" DS-DD 96 TPI with 50 Capacity Lockable Storage Box£12.49
50 5.25" DS-DD 96 TPI with 100 Capacity Lockable Storage Box£18.49
75 5.25° DS-DD 96 TPI with 100 Capacity Lockable Storage Box£23.49
100 5.25° DS-DD 96 TPI with 100 Capacity Lockable Storage Box£29.49
200 5.25 DS-DD 96 TPI with 2 100 Capacity Lockable Storage Boxes£54.99
200 5.25° DS-DD 96 TPI With 2 100 Capacity Lockable Storage boxes254.55
OUR 5.25" DISCS ARE VERY CAREFULLY SELECTED TO GIVE YOU 100%
ERROR FREE PERFORMANCE. EACH DISC IS OFFERED WITH OUR 100%
MADNEY BACK GUARANTEE AND IS SUPPLIED WITH LABELS

## 3.5" DISCS & BOXES

25 3.5" DS-DD 135 TPI with 40 Capacity Lockable Storage Box £31.95 45 3.5" DS-DD 135 TPI with 80 Capacity Lockable Storage Box £31.95 45 3.5" DS-DD 135 TPI with 80 Capacity Lockable Storage Box £37.95 55 3.5" DS-DD 135 TPI with 80 Capacity Lockable Storage Box £44.95 65 3.5" DS-DD 135 TPI with 80 Capacity Lockable Storage Box £49.95 75 3.5" DS-DD 135 TPI with 80 Capacity Lockable Storage Box £49.95 OUR 3.5" DS-DD 135 TPI with 80 Capacity Lockable Storage Box £49.95 OUR 3.5" DS-DD 135 TPI with 80 Capacity Lockable Storage Box £64.95 OUR 3.5" DS-DD 135 TPI with 80 Capacity Lockable Storage Box £64.95 BACK GUARANTEE AND IS SUPPLIED WITH OUR 100% MONEY BACK GUARANTEE AND IS SUPPLIED WITH LABELS	5 5 5 5 5
---	-----------

## HIGH DENSITY 5.25" DISCS

25 5.25° DS HD 1.6MB plus 50 BOX	£19.99
	£39.99
	£64.99
HIGH DENSITY 3.5" DISCS	
10 DS HD 3 5' DISCS	£18.99

## 

## **BULK BUYERS**

100 DSDD 3.5 TPI	£64.99
150 DSDD 3.5 TPI	£94.99
200 DSDD 3.5 TPI	£119.99
500 DS DD 3.5 TPI	£249.99
250 DSDD 5.25 TPI	£64.99
500 DSDD 5.25 TPI	£109.99
1000 DSDD 5.25 TPI	£199.99

## PRICE AND QUALITY GUARANTEE

All our Discs are top quality products and are certified 100% error free. Should you ever see a comparable product advertised in this magazine at a lower price we will not match it we will

BEAT IT GUARANTEED



## M.D. OFFICE SUPPLIES

18 CRESCENT WAY, FARNBOROUGH, KENT BR6 9LS

All prices include VAT and Delivery UK only

TELESALES HOTLINES: 0689-61400

\*\*\*\*\*\*\*\*\*\*



\*

\*

Supplied subject to availability. E/OE

TV TEXT SPECIALIS 69.99

Book now! For our next Video & Graphics **Weekend Course** 

Platinum Works! £179.00 Publishers' Choice £99.00 Professional Page £199.99 £199.99 Pagestream

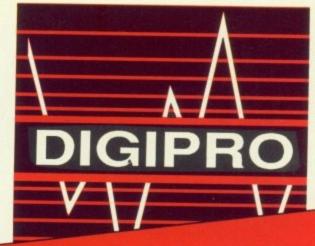
Designer £99.95 Professional £299.00

Superpic £569.00 £914.99 HP PaintJet DeskJets £579.00

## **DIGIPRO LIMITED**

Enterprise House, Howards Grove, Southampton SO1 5PR All Prices include VAT

Orders over £50 Postage & Packing Free Add £1.00 Postage & Packing for all other orders Please phone for prices outside the U.K.



Pro Video Plus £249.95 Video Effects 3D £159.95 Photon Paint II £79.95 DPaint III £79.95

hone 703703030

ANIMagic £69.95

> Call for your **FREE** video info pack!

## Genlocks

8802, 8806, NERIKI MAGNI, MINIGEN

20 MB Auto-Booting Commodore Hard Drives 2449.00



HERE is no better workhorse than a dot matrix printer – it will clatter away long after it's thoroughbred cousins are complaining of "toner low", "paper feed jammed" or some other namby pamby excuse.

Today's dot matrix printers are becoming more sophisticated, versatile and turbo-charged. Combine that with competitive pricing and low running costs and you have a printer that can be used for large workloads without breaking the bank balance.

As always, the name that first comes to mind when printers are discussed is Epson. The LQ860 is its latest offering, a 24 pin colour machine that is compatible with all previous Epson LQ printers, with a number of new facilities which make it both flexible and easy to use.

With clean, elegant lines it is attractive in a way which is far removed from the rugged, chunky look that characterises some of the latest impact printers. It is not small with a 16in by 18in footprint.

The control panel at the front right is clearly labelled to give a quick way of selecting from a number of in-built font styles and pitches, as well as paper handling functions which include a single sheet load.

The cover lifts back while a flap lifts forward and off to give access to the print head and ribbon. Two banks of DIP switches are also easily to hand. These can be used to set parameters for use with the serial port, print buffer size, default paper length and a range of other functions.

Setting up the LQ860 is straightforward. The documentation is clear and contains a step-by-step procedure which should take you through the printer assembly and self

Mike Rawlins looks at a printer which manages to be fast, high quality and quite colourful tests without any problems.

Both a parallel and a serial interface are supplied for connection to your Amiga. The parallel interface is the easiest to use, although the manual provides a wealth of information on serial communications which you might want to explore if your parallel port is tied up with a digitiser.

EITHER single sheet or continuous paper can be used. Single or double bin cut sheet feeders are available as options as is a pull tractor feed. This is recommended for use with special paper such as multi part forms and labels because the standard push tractor will not hold pages together.

Using continuous, no carbon, multi part paper, one original and up to three copies can be printed. The cut sheet feeders can be fitted without removing the continuous paper which can be held back while cut sheet

## More than just a pretty



printing is in progress.

The first thing you notice when the printer is switched on is the fan, which is not the quietest that's ever been produced. While the noise doesn't exactly fade into the background, it does become less obtrusive as you work on.

The noise when printing is remarkably low. No impact printer is ever going to be silent, but this one achieves a level which, subjectively, seems relatively quiet and is more than acceptable. It is substantially quieter than its Citizen rival, the HQP-40, perhaps because the plastic is a lot thicker.

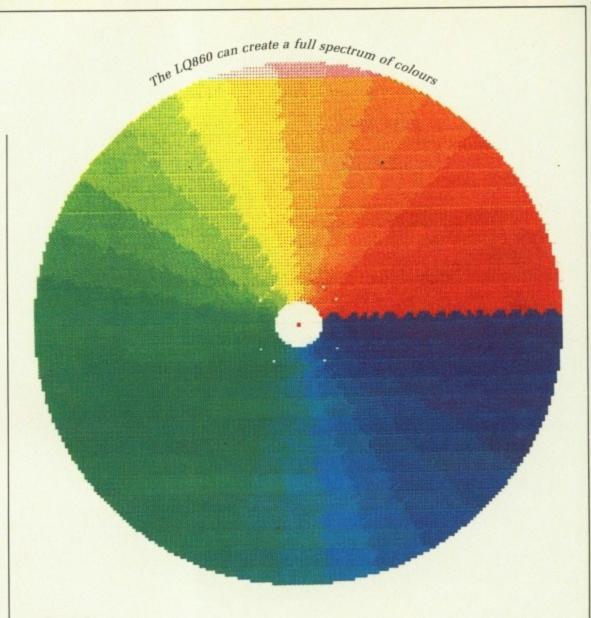
WO built-in letter quality fonts,
Roman and Sans Serif, and one draft
font are available in a range of pitches
from 10 to 20 cpi, plus proportional.
Two expansion slots can be used to
fit optional font modules which
include Courier, Prestige and Script.
Various international character sets
may be selected using the DIP
switches, which may also be set to
provide a high speed draft mode.

Print quality is good for both LQ and draft, as you would expect from a 24 pin printer. Character formation is not so good in high speed draft mode, but is acceptable for program listings.

Quoted speeds are 290 cps in high speed draft, 220 cps in normal draft and 73 cps for LQ. In practice, with a typical page of text, print speeds are likely to be a lot less than these figures. All printer manufacturers fudge these figures and the best results I could get were 164 cps in draft and 52 cps in letter quality.

The printing presses used to produce this magazine create different shades by using four colours – cyan, magenta, yellow and black. Dot matrix printers such as the LQ860 achieve the same effect by using a four colour ribbon and making four passes across the page. The final quality is not as good, but is acceptable for general purpose use or for draft printing of commercial artwork. One problem is that the heavy printing required for large areas of solid colour tends to wrinkle the page.

The best results were obtained



using Workbench 1.3 Preferences set to EpsonQ with colour. Dumping screens from Deluxe Paint worked a treat.

The printer's use of consumables is good. It is not particularly fussy about paper, accepting widths up to 10 inches. Ribbon life is quoted as three million characters, which may sound good, but then the ribbons are expensive, at £20.11 for the colour ribbon and £14.89 for the black fabric ribbon.

PRINT head life is claimed to be 200 million strokes per pin. I'm not going to count to see if they are telling the truth.

The LQ860 is a well designed, solidly constructed printer that provides excellent performance. It is expensive, but when you spread the cost out over a number of years it becomes a less flagrant purchase. Besides, someone has to pay to keep the Epson name on the side of a racing car or flying the flag around the most expensive golf courses in the land.

Epson has a recommended retail price of £861.35 to you and me. A

few calls around some shops showed that the LQ860 can be picked up for £632.50 before haggling. This is an excellent price for such a well made machine.

#### REPORT CARD

LQ860 Epson £861.35 (but haggle)

custom printer driver.

Epson's RRP is a joke, fortunately few dealers expect you to pay the full amount. Expect £200 off.

#### OVERALL

83%

At a typical selling price of £550 plus VAT this is a great buy. It produces acceptable colour and great mono results. A master printer.

# DEAL DIRECT

TRADE - SCHOOLS, COLLEGES, LOCAL AUTHORITY, 1 MAN BANDS - ALL ORDERS WELCOME ALL PRICES INCLUDE VAT & DELIVERY DISKS ARE SUPPLIED WITH LABELS, ENVELOPES & WRITE PROTECTS

	HOES HACEON	AT AWAR	A les to test 4 h	123.30	NO AIL	E-A-A-R-R-TA			NVELOPES &		
	DISKS				1		TY 10	QTY 20	QTY30	QTY 50	QTY 100
3.5"	UNCERTIFIED	)		0			6.99	£13.80	€20.50	£33.99	£67.00
3.5"	DS DD 135 TP			•		3	7.50	£14.80	£21.70	£36.50	£72.00
3.5"	DS DD 135 TD	SUPERE	3			3	7.99	£15.90	£22.99	£38.99	£74.99
3.5"	12 HOLDER S	OLID PLA	STIC WIT	H 10 DIS	KS ADD	0.80 TO P	PRICES A	BOVE PER BO	X		
3.5"	BRANDED DS	DD 135	TPI TERR	A QL	JALITY	3	9.50	£18.00	£27.00	£44.00	286.00
3.5"	BRANDED DS	DD 135 T	TPI SONY			21	1.99	£22.00	£32.00	£50.00	£99.00
3.5"	BRANDED DS	HIGH DE	NSITY 2.	MEG SC	YNC	£2	6.00	£51.00	£75.00	£122.50	£244.00
3.5	SS DD 135 TP					3	8.99	£17.50	£26.00	£43.00	£84.00
3.5"	DS HIGH DEN		MEG			£1	9.90	£39.00	£58.00	£95.00	£175.00
3"	BRANDED MA						£25	?	?	?	?
								00.50	29.00	£14.50	£29.00
5.25"	DS DD 48 TPI	-PACKED	IN 10'S &	25'S			3.50	£6.50		£14.50	125.00
5.25"	10 HOLDER S	OLID PLA	ASTIC WIT	H 10 DIS	KS ADD	0.90 TO F	PRICE AB	OVE PER BOX	000.00	£33.00	€65.00
5.25"	BRANDED DS	DD 48 TI	PI 3M				6.99	£13.50	£20.00	£45.00	293.00
5.25"	BRANDED DS	HIGH DE	ENSITY 1.6	5 MEG 3N	A		9.99	£19.50	£27.90		
PI	RE-FORMATTE	D DISKS	1-100 AD	D 20p PE	R DISK A	ND PLEA	ASE STAT	E FORMAT R	EQUIRED IE: AM	IIGA, ST, P	CETC
										Separation 1	
	DISK STOR	AGE BOX	KES		QTY 1		QTY 2	QTY3	QTY 5 £4.50	DIIV 2	POVES
3.5"	12 HOLDER S	OLID PLAS	TIC EXTRA	STRONG	£0.99 £4.99		£1.90 £9.50	£2.70 £14.00	£4.50 £17.50		BOXES
3.5"	40 HOLDER L				£4.99 £5.99		£9.50 £10.99	£15.99	£22.00	AND	GET 1
3.5"	80 LOCKABL 100 HOLDER L	OCKARIE A	2 KEYS & F	IVIDEDS	£5.99 £6.99		£10.99	£18.99	£27.50		TERRA
3.5"	150 HOLDER S	TACKABLE	POSSO R	OX	£14.99		£29.50	£44.00	£72.00		
5.25"	50 HOLDER L	OCKABLE	2 KEYS & F	DIVIDERS	€4.50		€8.50	£11.99	£18.99	DISK	DS DD
5.25"	120 HOLDER L	OCKABLE	2 KEYS ET	C.	€5.50		£10.90	£16.00	£25.00		
0.20					CTODAG	EPOV	OFFER	VII DIEKE	AND BOYES A	SAROVE	Water III (Call (Call
	THE	ULTIMA'	IE DISKS	5 WITH S	STUHAC	3.5" DS D	OLLEH -	£11.99	AND BOXES A	CADOVE	
3.5"	40 HOLDER L				10 X 20 X	3.5" DS D		£11.59 £19.50	477		
3.5"	40 HOLDER L	OCKABLE	DISK BOX	WITH	30 X	3.5" DS D		£28.95		-	ASE NOTE
3.5"	80 HOLDER L				20 X	3.5" DS D		£19.99			E ALWAYS
3.5"	80 HOLDER L				30 X	3.5" DS D		£27.00			SEND OUF
3.5"	80 HOLDER L	OCKABLE	DISK BOX	WITH	40 X	3.5" DS D		£34.00		SUPE	ERB DISKS
3.5"	150 HOLDER S	TACKABLE	E POSSO B	HTIW XO	100 X		DD DISKS	€84.00	THE		SE BOXES
5.25"	120 HOLDER L	OCKABLE	DISK BOX	WITH	50 X	5.25" DS D	DD DISKS	£19.50	-		OE DOME
QUICKSI CHEETA COMPET TURBO TURBO CHEETA RAM DE GENIUS	AH CHALLENGER HOT 2 TURBO AH MACH 1 TITION PRO 5000 JUNIOR SUPER AH 125+	£8.99 £8.50 £9.95 £3.99 £5.99 £5.99 £7.50 JSE £34.00	£9.00 £17.00 £16.00 £19.50 £7.00 £11.50 £11.50 £14.50 BOTH ING	ULTIMAT QTY 1 £6.99	O III MENU	L OFFER QTY2 £13.50	AMIGA/A IBM PAR 3.5", 5.25 MOUSE I AMIGA A THINGI I THINGI II COPY HO	TARI ST CENT. ALLEL CENTRO " & 3" DISK CLE HOUSE IND ATARI ST DI DLDER - ADJUS	PUALITY (BLUE OR PARALLEL PRINTE PRINTER CA ANING KITS & FLU UST COVERS  TABLE MOVING AFOYSTICK ADAPTO	ER CABLE 2.0 BLE 2.0M JID	£2.99 OM £3.50 £3.50 £1.99 £2.90 £2.99 £3.00 £3.99 £14.99 £4.95
GENIOS	GM 0000 MC03	L 240.00	) T LIBITAL	II ONOE I							
	ER RIBBONS	5	QTY 1	QTY 2	QTY		FRESH	1 V 000# C 000	QTY 1		
	AD 8256		£3.99	£7.50	£18.00			LX 800/LQ 800	£3.50 £3.99		
	AD 9512	0	£3.50 £2.99	£6.50 £5.50	£14.90 £13.90		OK1 18	LQ/VP/100, 1050	23.99		
	AD DMP2000/300 AD DMP 4000	U	12.33				OK 1 10	me time.	20.00		£19.99
AMCTO.			63 00	\$7.50	£19 9	9	PANAS		£3.50		
			£3.99 £3.99	£7.50 £7.50	£19.9 £18.0			ONIC 1080/90 1300/1600	£3.50 £3.99	£6.50 £7.50	£14.90 £19.99
BROTHE	ER HR15/20/40		£3.99 £3.99 £3.50			0	RICOH	ONIC 1080/90	£3.99 £3.99	£6.50 £7.50 £7.50	£14.90 £19.99 £19.99
BROTHE			23.99	£7.50	£18.0 £14.0 £19.9	0 0 9	RICOH SHINW STAR L	ONIC 1080/90 1300/1600 A CP 80 .C 10	£3.99 £3.99 - £2.50	£6.50 £7.50 £7.50 £4.80	£14.90 £19.99 £19.99 £14.50
CANNO CITIZEN	ER HR15/20/40 DOORE MPS 803 N PW 1080 N 120 D		£3.99 £3.50 £3.99 £3.50	£7.50 £6.50 £7.50 £6.50	£18.0 £14.0 £19.9 £14.9	0 0 9	RICOH SHINW STAR L STAR L	ONIC 1080/90 1300/1600 A CP 80 .C 10 .C 10 COLOUR	£3.99 £3.99 £2.50 £6.99	£6.50 £7.50 £7.50 £4.80 £12.99	£14.90 £19.99 £19.99 £14.50 £33.00
BROTHE COMMO CANNOI CITIZEN EPSON	ER HR15/20/40 DDORE MPS 803 N PW 1080 N 120 D LX 80/86/GX 80		£3.99 £3.50 £3.99 £3.50 £3.50	£7.50 £6.50 £7.50 £6.50 £5.80	£18.0 £14.0 £19.9 £14.9 £15.5	0 0 9 0	RICOH SHINW STAR L STAR L STAR L	ONIC 1080/90 1300/1600 A CP 80 .C 10 .C 10 COLOUR .C 24/10	£3.99 £3.99 £2.50 £6.99 £4.50	£6.50 £7.50 £7.50 £4.80 £12.99 £8.50	£14.90 £19.99 £19.99 £14.50 £33.00 £22.99
BROTHE COMMO CANNO CITIZEN EPSON EPSON	ER HR15/20/40 DOORE MPS 803 N PW 1080 N 120 D LX 80/86/GX 80 MX/FX/RX/NX 80		£3.99 £3.50 £3.99 £3.50 £3.50 £3.50	£7.50 £6.50 £7.50 £6.50 £5.80 £6.50	£18.0 £14.0 £19.9 £14.9 £15.5 £14.9	0 0 9 0 0	RICOH SHINW STAR L STAR L STAR L	ONIC 1080/90 1300/1600 A CP 80 .C 10 .C 10 COLOUR	£3.99 £3.99 £2.50 £6.99	£6.50 £7.50 £7.50 £4.80 £12.99 £8.50	£14.90 £19.99 £19.99 £14.50 £33.00 £22.99
BROTHE COMMO CANNOI CITIZEN EPSON EPSON	ER HR15/20/40 DDORE MPS 803 N PW 1080 N 120 D LX 80/86/GX 80		£3.99 £3.50 £3.99 £3.50 £3.50	£7.50 £6.50 £7.50 £6.50 £5.80	£18.0 £14.0 £19.9 £14.9 £15.5	0 0 9 0 0	RICOH SHINW STAR L STAR L STAR L	ONIC 1080/90 1300/1600 A CP 80 .C 10 .C 10 COLOUR .C 24/10	£3.99 £3.99 £2.50 £6.99 £4.50	£6.50 £7.50 £7.50 £4.80 £12.99 £8.50	£14.90 £19.99 £19.99 £14.50 £33.00 £22.99
BROTHE COMMO CANNOI CITIZEN EPSON EPSON EPSON PRINT STAR L	ER HR15/20/40 DOORE MPS 803 N PW 1080 N 120 D LX 80/86/GX 80 MX/FX/RX/NX 80 MX/FX/100,1000	IONO	£3.99 £3.50 £3.99 £3.50 £3.50 £3.50 £3.50	£7.50 £6.50 £7.50 £6.50 £5.80 £6.50	£18.0 £14.0 £19.9 £14.9 £15.5 £14.9	0 0 9 0 0 0 0 0 0	RICOH SHINW STAR L STAR L STAR L STARN	ONIC 1080/90 1300/1600 A CP 80 .C 10 .C 10 COLOUR .C 24/10	£3.99 £3.99 £2.50 £6.99 £4.50 £3.99	£6.50 £7.50 £7.50 £4.80 £12.99 £8.50	£14.90 £19.99 £19.99 £14.50 £33.00 £22.99
BROTHE COMMO CANNOI CITIZEN EPSON EPSON EPSON PRINT STAR L STAR L	ER HR15/20/40 DOORE MPS 803 N PW 1080 N 120 D LX 80/86/GX 80 MX/FX/RX/NX 80 MX/FX/100,1000 TERS .C 10 PRINTER M .C10 COLOUR .C24-110 (24 PIN)	IONO	£3.99 £3.50 £3.99 £3.50 £3.50 £3.50 £3.50	£7.50 £6.50 £7.50 £6.50 £5.80 £6.50 £6.50 £6.50	£18.0 £14.0 £19.9 £14.9 £15.5 £14.9 £14.9 PRINTI	0 0 9 0 0 0 0 0 0	RICOH SHINW STAR L STAR L STAR L STARN	ONIC 1080/90 1300/1600 A CP 80 .C 10 .C 10 COLOUR .C 24/10 L/ND 10 OTER STAND - T COLUMN 1 PIECE	£3.99 £3.99 £2.50 £6.99 £4.50 £3.99	£6.50 £7.50 £7.50 £4.80 £12.99 £8.50 £7.50	£14.90 £19.99 £19.99 £14.50 £33.00 £22.99 £19.99
BROTHE COMMO CANNOI CITIZEN EPSON EPSON EPSON PRINT STAR L STAR L	ER HR15/20/40 DORE MPS 803 N PW 1080 N 120 D LX 80/86/GX 80 MX/FX/RX/NX 80 MX/FX/100,1000 TERS .C 10 PRINTER M	IONO	£3.99 £3.50 £3.99 £3.50 £3.50 £3.50 £3.50 £3.50 £3.50 £11 £2 £2 £2	£7.50 £6.50 £7.50 £6.50 £5.80 £6.50 £6.50 £6.50	£18.0 £14.0 £19.9 £14.9 £15.5 £14.9 £14.9 PRINTI FUL WARRA	0 0 9 0 0 0 0 0 ERS L	RICOH SHINW STAR L STAR L STARN PRII 80 C	ONIC 1080/90 1300/1600 A CP 80 .C 10 .C 10 COLOUR .C 24/10 L/ND 10 OTER STAND - T COLUMN 1 PIECE	£3.99 £3.99 £2.50 £6.99 £4.50 £3.99 COP QUALITY	£6.50 £7.50 £7.50 £4.80 £12.99 £8.50 £7.50	£14.90 £19.99 £19.99 £14.50 £33.00 £22.99 £19.99 £9.95
BROTHE COMMO CANNOI CITIZEN EPSON EPSON EPSON PRINT STAR L STAR L	ER HR15/20/40 DORE MPS 803 N PW 1080 N 120 D LX 80/86/GX 80 MX/FX/RX/NX 80 MX/FX/100,1000 TERS .C 10 PRINTER M.C10 COLOUR .C24-110 (24 PIN) WARE & HAF	RDWARE RRP £24.99 £19.99	£3.99 £3.50 £3.99 £3.50 £3.50 £3.50 £3.50 £3.50 £1.50 £11.52 £2 £2 £2 £2 £3 £3 £3 £3 £3 £3 £3 £3 £3 £3 £3 £3 £3	£7.50 £6.50 £7.50 £6.50 £5.80 £6.50 £6.50 £6.50 £6.50	£18.0 £14.0 £19.9 £14.9 £15.5 £14.9 £14.9 PRINTI FUL WARRA	O O O O O ERS L ANTY	RICOH SHINW STAR L STAR L STARN PRII 80 C	ONIC 1080/90 1300/1600 A CP 80 .C 10 .C 10 COLOUR .C 24/10 L/ND 10 OTER STAND - T COLUMN 1 PIECE	SHOOT EM UP SPACE HARRIER	£6.50 £7.50 £7.50 £4.80 £12.99 £8.50 £7.50	£14.90 £19.99 £19.99 £14.50 £33.00 £22.99 £19.99 £9.95
PRINT STAR L SOFT	ER HR15/20/40 DORE MPS 803 N PW 1080 N 120 D LX 80/86/GX 80 MX/FX/RX/NX 80 MX/FX/100,1000 TERS .C 10 PRINTER M.C10 COLOUR .C24-110 (24 PIN) WARE & HAF	RDWARE	£3.99 £3.50 £3.99 £3.50 £3.50 £3.50 £3.50 £3.50 £3.50 £11 £2 £2 £2	£7.50 £6.50 £7.50 £6.50 £5.80 £6.50 £6.50 £6.50 £6.50	£18.0 £14.0 £19.9 £14.9 £15.5 £14.9 £14.9 PRINTI FUL WARRA	O O O O O ERS L ANTY	RICOH SHINW STAR L STAR L STARN PRIM 80 C	ONIC 1080/90 1300/1600 A CP 80 .C 10 .C 10 COLOUR .C 24/10 L/ND 10 OTER STAND - T COLUMN 1 PIECE OURS £15.99 £19.99	SHOOT EM UP SPACE HARRIER STARGLIDER 2	£6.50 £7.50 £7.50 £4.80 £12.99 £8.50 £7.50 R £29 2 £19 £24	£14.90 £19.99 £19.99 £14.50 £33.00 £22.99 £19.99 £9.95 RP OURS .99 £22.99 .99 £15.95
PRINT STAR L STAR L STAR L STAR L STAR L STAR L STAR L	ER HR15/20/40 DORE MPS 803 N PW 1080 N 120 D LX 80/86/GX 80 MX/FX/RX/NX 80 MX/FX/100,1000  FERS C 10 PRINTER M C10 COLOUR C24-110 (24 PIN)  WARE & HAR CARS 2 RIOUS ATORS ATION OF	RDWARE RRP £24.99 £19.99 £18.99	£3.99 £3.50 £3.99 £3.50 £3.50 £3.50 £3.50 £3.50 £3.50 £15.90 £15.99 £15.99	£7.50 £6.50 £7.50 £6.50 £5.80 £6.50 £6.50 £6.50 £6.50	£18.00 £14.00 £19.90 £14.90 £15.50 £14.90 PRINTI FUL WARRA	O O O O O ERS L ANTY	RICOH SHINW STAR L STAR L STARN PRII 80 C	ONIC 1080/90 1300/1600 A CP 80 .C 10 .C 10 COLOUR .C 24/10 L/ND 10 OTER STAND - T COLUMN 1 PIECE OURS £15.99 £19.99	SHOOT EM UP SPACE HARRIER STARGLIDER 2 SUPER HANG ON	E6.50 £7.50 £7.50 £4.80 £12.99 £8.50 £7.50 R £29 2 £19 £24 £24	£14.90 £19.99 £19.99 £14.50 £33.00 £22.99 £19.99 £9.95 RP OURS .99 £22.99 .99 £15.95 .95 £18.95
BROTHE COMMO CANNOI CANNOI CITIZEN EPSON EPSON EPSON EPSON STAR LISTAR LI	ER HR15/20/40 DORE MPS 803 N PW 1080 N 120 D LX 80/86/GX 80 MX/FX/RX/NX 80 MX/FX/100,1000  FERS C 10 PRINTER M C10 COLOUR C24-110 (24 PIN) WARE & HAR CARS 2 RIOUS ATORS ATION OF	CONO RDWARE RRP £24.99 £19.99 £18.99	£3.99 £3.50 £3.99 £3.50 £3.50 £3.50 £3.50 £3.50 £3.50 £1.50 £15.90 £15.99 £15.99 £22.99	£7.50 £6.50 £7.50 £6.50 £5.80 £6.50 £6.50 £6.50 £6.50 HAW KING LOR RISI PAC	£18.00 £14.00 £19.90 £14.90 £15.50 £14.90 PRINTI FUL WARRA VKEY GDOM OF RDS OF THING SUN CLAND	O O O O O ERS L ANTY	RICOH SHINW STAR L STAR L STARN PRII 80 C	ONIC 1080/90 1300/1600 A CP 80 .C 10 .C 10 COLOUR .C 24/10 L/ND 10 OTER STAND - T COLUMN 1 PIECE OURS £15.99 £15.99 £19.99	SHOOT EM UP SPACE HARRIER STARGLIDER 2 SUPER HANG ON THE DUAL	E6.50 £7.50 £7.50 £4.80 £12.99 £8.50 £7.50 R £29 2 £19 £24 £24	£14.90 £19.99 £19.99 £14.50 £33.00 £22.99 £19.99 £9.95 RP OURS .99 £22.99 .99 £15.95 .95 £18.95 .99 £19.99
PRINT STAR L STA	ER HR15/20/40 DORE MPS 803 N PW 1080 N 120 D LX 80/86/GX 80 MX/FX/RX/NX 80 MX/FX/100,1000 FERS .C 10 PRINTER MC10 COLOUR .C24-110 (24 PIN) WARE & HAF CARS 2 RIOUS ATORS ATION OF FRADERS	CONO RDWARE RRP £24.99 £19.99 £18.99 £29.99 £29.99	£3.99 £3.50 £3.99 £3.50 £3.50 £3.50 £3.50 £3.50 £3.50 £15.90 £15.99 £15.99 £15.99 £19.99	£7.50 £6.50 £7.50 £6.50 £5.80 £6.50 £6.50 £6.50 £6.50 HAW KING LOR RISI PAC PAL	£18.00 £14.00 £19.90 £14.90 £15.50 £14.90 PRINTING FUL WARRA	O O O O O ERS L ANTY	RICOH SHINW STAR L STAR L STARN PRII 80 C RRP £19.99 £24.99 £29.99 £19.95 £19.99	ONIC 1080/90 1300/1600 A CP 80 .C 10 .C 10 COLOUR .C 24/10 L/ND 10 OURS \$15.99 \$19.99 \$22.99 \$15.95 \$15.99	SHOOT EM UP SPACE HARRIER STARGLIDER 2 SUPER HANG ON THE DUAL WAR IN MIDDLE E	E6.50 £7.50 £7.50 £4.80 £12.99 £8.50 £7.50 R £29 2 £19 £24 £24	£14.90 £19.99 £19.99 £14.50 £33.00 £22.99 £19.99 £19.99 £9.95 £9.95 £18.95 .99 £19.99 .95 £19.99 .99 £14.95
BROTHE COMMO CANNOI CAN	ER HR15/20/40 DORE MPS 803 N PW 1080 N 120 D LX 80/86/GX 80 MX/FX/RX/NX 80 MX/FX/100,1000 FERS .C 10 PRINTER MC10 COLOUR .C24-110 (24 PIN) WARE & HAF CARS 2 RIOUS ATORS ATION OF FRADERS	CONO RDWARE RRP £24.99 £19.99 £18.99	£3.99 £3.50 £3.99 £3.50 £3.50 £3.50 £3.50 £3.50 £3.50 £1.50 £15.90 £15.99 £15.99 £22.99	£7.50 £6.50 £7.50 £6.50 £5.80 £6.50 £6.50 £6.50 £6.50 HAW KING LOR RISI PAC PAL	£18.00 £14.00 £19.90 £14.90 £15.50 £14.90 PRINTI FUL WARRA VKEY GDOM OF RDS OF THING SUN CLAND	O O O O O ERS L ANTY	RICOH SHINW STAR L STAR L STARN PRII 80 C	ONIC 1080/90 1300/1600 A CP 80 .C 10 .C 10 COLOUR .C 24/10 L/ND 10 OTER STAND - T COLUMN 1 PIECE OURS £15.99 £15.99 £19.99	SHOOT EM UP SPACE HARRIER STARGLIDER 2 SUPER HANG ON THE DUAL WAR IN MIDDLE E WICKED	E6.50 £7.50 £4.80 £12.99 £8.50 £7.50 R R £29 2 £19 £24 £24 £24 £24 £24 £24	£14.90 £19.99 £19.99 £14.50 £33.00 £22.99 £19.99 £19.99 £9.95 £19.99 £15.95 .99 £15.95 .99 £19.99 .99 £14.95 .95 £15.99
BROTHE COMMO CANNOL CAN	ER HR15/20/40 DORE MPS 803 N PW 1080 N 120 D LX 80/86/GX 80 MX/FX/RX/NX 80 MX/FX/100,1000 TERS .C 10 PRINTER MC10 COLOUR .C24-110 (24 PIN) WARE & HAF T CARS 2 RIOUS ATORS ATION OF TRADERS IN D PRIX	CONO RDWARE RRP £24.99 £19.99 £18.99 £29.99 £29.99 £19.99	£3.99 £3.50 £3.99 £3.50 £3.50 £3.50 £3.50 £3.50 £3.50 £15.90 £15.99 £15.99 £15.99 £15.99 £15.99	£7.50 £6.50 £7.50 £6.50 £5.80 £6.50 £6.50 £6.50 £6.50 HAW KING LOR RISI PAC PAL	£18.00 £14.00 £19.90 £14.90 £15.50 £14.90 PRINTING FUL WARRA	O O O O O ERS L ANTY	RICOH SHINW STAR L STAR L STARN STARN PRII 80 C RRP £19.99 £24.99 £29.99 £19.95 £19.99 £24.99	ONIC 1080/90 1300/1600 A CP 80 .C 10 .C 10 COLOUR .C 24/10 L/ND 10 OURS \$15.99 \$19.99 \$22.99 \$15.95 \$15.99	SHOOT EM UP SPACE HARRIER STARGLIDER 2 SUPER HANG ON THE DUAL WAR IN MIDDLE E	E6.50 £7.50 £4.80 £12.99 £8.50 £7.50 R R £29 2 £19 £24 £24 £24 £24 £24 £24	£14.90 £19.99 £19.99 £14.50 £33.00 £22.99 £19.99 £19.99 £19.99 £15.95 .99 £15.95 .99 £19.99 .95 £19.99 .95 £19.99 .95 £19.99
BROTHE COMMO CANNOI CITIZEN EPSON EP	ER HR15/20/40 DORE MPS 803 N PW 1080 N 120 D LX 80/86/GX 80 MX/FX/RX/NX 80 MX/FX/100,1000 TERS .C 10 PRINTER MC10 COLOUR .C24-110 (24 PIN) WARE & HAF T CARS 2 RIOUS ATORS ATION OF TRADERS IN D PRIX	CONO RDWARE RRP £24.99 £19.99 £18.99 £29.99 £29.99	£3.99 £3.50 £3.99 £3.50 £3.50 £3.50 £3.50 £3.50 £3.50 £15.90 £15.99 £15.99 £15.99 £15.99 £15.99	£7.50 £6.50 £7.50 £6.50 £5.80 £6.50 £6.50 £6.50 £6.50 HAW KING LOR RISI PAC PAL	PRINTI FUL WARRA  VKEY GDOM OF RING SUN CLAND LADIN PULOUS	O O O O O ERS L ANTY	RICOH SHINW STAR L STAR L STARN STARN PRII 80 C RRP £19.99 £24.99 £29.99 £19.95 £19.99 £24.99	ONIC 1080/90 1300/1600 A CP 80 .C 10 .C 10 COLOUR .C 24/10 L/ND 10  OTER STAND - T COLUMN 1 PIECE  OURS £15.99 £19.99 £22.99 £15.95 £15.99 £19.99	SHOOT EM UP SHOOT EM UP SPACE HARRIER STARGLIDER 2 SUPER HANG ON THE DUAL WAR IN MIDDLE E WICKED EDUCATIONA	E6.50 £7.50 £4.80 £12.99 £8.50 £7.50 R R £29 2 £19 £24 £24 £24 £24 £24 £19 £19 L FUN SCHO	£14.90 £19.99 £19.99 £14.50 £33.00 £22.99 £19.99 £19.99 £19.99 £15.95 £18.95 £18.95 £19.99 £15.95 £18.95 £19.99 £15.95 £19.99 £14.95 £15.99 £14.95 £15.99 £15.99

TEL: 0533 471485 24 HOUR DISK HOTLINE PLEASE POST CHEQUE WITH ORDER PAYABLE TO: MIDLAND MICROSOFT, AMIGA COMPUTING, MAIL ORDER DIV. GROUND FLOOR, UNIT 22A, SYKEFIELD, LEICESTER LE3 OLB

20% OFF RRP OF ALL SOFTWARE NOT JUST AMIGA SOFTWARE, DUE TO THE LARGE RANGE OF SOFTWARE, PLEASE PHONE 0533-513372 TO CHECK AVAILABILITY + PRICES

ESPITE rumours to the contrary there is music software available for the Amiga - good, hi-end pro stuff, and lots of it sequencers, samplers, voice editors, random pattern generators. There's the whole range of traditional music software applications, and some not so traditional ones.

The same was not true 12 months ago, so for all Amiga maniacs who also happen to be musicians, this comes as something of a major relief.

Multi-tasking makes the Amiga an ideal music machine. A computer boffin may expect to finish doing one thing before another but the musician expects concurrency. Even the simplest one-man band wants to blow his kazoo while he strums a guitar and thumps a drum.

While other systems, like the Mac, attempt to simulate multi-tasking, and while some, like the IBM PC, have only recently introduced it as an alternate operating environment, of all of them only the Amiga comes out of the box with true multi-tasking as an inherent part of its operating system.

Only the Amiga lets you edit synthesiser voices while playing back a music sequence. In other words you will be able to change the sound of your synthesiser patch in real time as your music is being performed.

It means that you can search through voice librarian programs to find that obscure flugelhorn patch without having to reboot your machine.

The bits of the Amiga which usually go kerrrzzzplat are 8 bit digital audio channels. And there are four of them. In essence your Amiga is in fact a polyphonic, four voice sampling synthesiser.

Huh? You mean I bought a synthesiser, and I didn't even know it? Exactly!

Now listen carefully, because sometimes it takes a while for this point to sink in. Your Amiga is a

Dean Friedman is an expert on computer music, on the Amiga particular. Based in the US he runs the New York School of Synthesis. Dean has had a number of chart hits including Lydia and Lucky Stars. He also wrote the title music for the television series Boon.

synthesiser. And a sampler.

I have often thought it would be a great idea to sell plastic decals with a picture of piano keys and synthesiser faders that you could slap on to your Amiga simply to emphasise this important but often ignored fact - the Amiga is a stand-alone musical instrument.

designed to take advantage of this unique and powerful feature. Why should this make

you happy?

Because, for one thing, using only your Amiga and a music sequencer

program, you can develop a full blown polyphonic musical arrangement or demo without plugging in a single other instrument.

And, then, when you are finally ready to incorporate other keyboards and synth modules into an extended Midi environment - no problem. Simply plug a Midi interface into your serial port and all the parts that were being played using the Amiga's own four voices can now be performed on any combination of external synthesisers or voice modules.

ULTI-TASKING and four channel audio would be compelling enough reasons for selecting the Amiga as a music workstation, but

it's software which counts.

Making the Amiga rock there are four major players. Dr T's KCS (Keyboard Controlled Sequencer), Texture by Sound Ouest. SoundScape Pro Midi Studio by Mimmetics, and Dynamic Studio by New Wave Software.

Of the four, KCS is the most full featured. It's a well implemented,

mature and reliable program, with global editing features, adequate sync features and powerful realtime performance.

KCS has some interesting random pattern generators, sometimes referred

lagical Almost all Amiga music software is

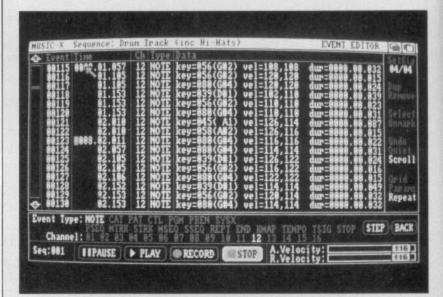
> to as compositional aids. These are algorithms that allow you to input a musical phrase and then randomly alter certain parameters of that material within limits you define.

It's a handy way of generating interesting musical ideas with a little help from your amigo. It's still up to you to decide what's musical and what's not.

KCS is a flexible music sequencer which, though not simple to learn, packs a lot of power under the hood.

A comparable Amiga sequencer is Texture, by Sound Quest. Like Dr T's KCS. Texture was originally written for the IBM PC and has been a tried studio standard for many years. The Amiga version remains true to the original and is further enhanced by taking advantage of the Amiga's graphic and audio abilities.

Whereas KCS takes more of a linear compositional approach, Texture is



From here you can examine and edit each event in sequence

Dean Friedman explains why the Amiga is the right machine for professional musicians

# Musical Minmetics. In many ways it is

designed to record sequences more along the lines of a drum machine by chaining together short sections of music to create a song.

Although these two approaches reflect different orientations, both programs will easily adapt to your compositional style.

Both packages have been released by companies that produce a wide variety of compatible music software, particularly voice editors, which are designed to run especially well together in the Amiga's multi-tasking environment.

This allows for the kind of interactive and organic power-using I referred to earlier when explaining multi-tasking.

Being able to move directly from sequencing to voice editing to patch management and back on the same screen is a feature that is still unique to the Amiga.

An important entry in the Amiga music sequencer playoffs is SoundScape Pro Midi Studio by Mimmetics. In many ways it is the most idiosyncratic of the Amiga sequencers. The first pro music sequencer designed especially for the Amiga, SoundScape makes extensive use of graphics. Part of its interface uses a graphic depiction of the elements of a studio patch bay that allows you to establish signal routings by connecting two or more icons with a click of the mouse.

SOUNDSCAPE takes a modular programming approach – again taking advantage of the Amiga's multi-tasking – which allows you to operate a variety of different utilities including the ability to trigger and display pictures from a musical note within a sequence.

The result is a sequencing environment that is original and extremely powerful but which can also be intimidating to a beginner. A simpler, more traditional, front end would go a long way towards making this program more accessible to the average user. And, although

Mimmetics has taken some steps in this direction it still hasn't gone quite far enough.

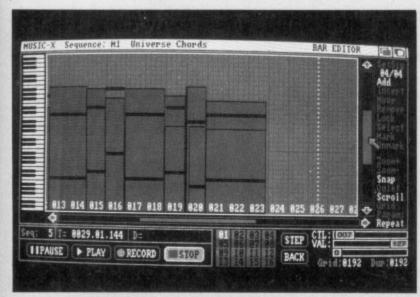
The youngest entrant in this field is a thoroughly enjoyable sequencing program called Dynamic Studio, by New Wave Software.

The company entered the Amiga music field a year ago with a great little program called Dynamic Drums which has the distinction of being the very first full featured drum machine on a disc. It makes use of the Amiga's four audio channels to trigger a variety of drum samples.

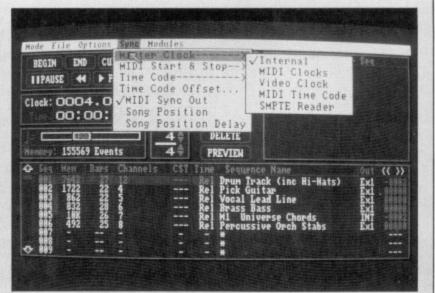
It didn't take long for New Wave Software to expand its hip little drum machine into a full fledged sequencer. The result is Dynamic Studio, a music sequencer designed to run right alongside Dynamic Drums.

Having a built-in drum machine would be enough to qualify Dynamic Studio as being unique among music sequencers, but it also has one other feature all of the other Amiga sequencers still lack, and that is graphic editing.

Dynamic Studio offers the cut and paste graphic note editing that has become standard on high-end sequencers within the last year. Using a mouse you can click and drag on



The bar editor lets you get at the guts of a sequence



The sequencer page allows instrument parts to be recorded one by one

rectangular notes moving them along a piano roll-type grid. Editing features include insert, delete, move, copy and quantise.

Now, by virtue of its graphic editing alone, Dynamic Studio would be the Amiga sequencer of choice, if it wasn't for the fact that it lacks some of the important global editing and sync features of the other three sequencers.

The hard truth is that, even though all four of the products I just described can legitimately be considered high-end professional music sequencers, when compared head to head with the latest state of the art sequencers available for the Mac and the IBM PC, they still fall short.

Don't get me wrong. These Amiga sequencers are professional products. And, they can be and are being used by music professionals in recording studios every day.

But when it comes to providing the most up to date editing tools such as those for graphic controller editing – the ability to edit a feature such as pitch bend by drawing, a waveshape with the mouse and SMPTE frame display, they are still about 12 months behind the industry leaders such as Vision by Opcode or Performer by Mark of the Unicorn.

OES this mean I'm suggesting that you bury your Amiga in the backyard and run out to buy a Macintosh or (heaven forbid) an Atari ST? No. All I'm saying is that it's a trade off.

The Amiga is certainly a better machine. On the other hand, as Amiga musicians you will still have to make do without some of the newer editing tools that are fast becoming standard on other sequencing programs but have yet to

be fully implemented in Amiga music software.

This will this change, imminently. Passport, one of the original makers of music sequencing software, has just announced that it is porting its popular Master Tracks Pro sequencer over to the Amiga.

Microillusions has released its long awaited Music X, written especially for the Amiga. It works and looks great.

These new releases will go a long way towards addressing all the sequencing needs of the Amiga musician. The sequencing packages existing today for the Amiga are not Mickey Mouse; they are professional sequencing programs.

And while you may have to sacrifice some of the more exotic state of the art sequencer editing features around, you still have access to significant features such as multitasking, four channel audio and enhanced graphics. These remain unique to the Amiga.

## SEVENTEEN BIT SOFTWARE

The UK's leading supplier of European PD Software, as seen at the Commodore Show, Novotel, London.

# Seventeen Bit are pleased to announce the... AMIGA COMPUTING PACK

Containing the following discs...

- **Disc 404 –** 17Bit Supreme sounds Vol 1, excellent jukebox featuring a brilliant modern version of Toccata by Allister Brimble and more...
- **Disc 423 –** A special compilation of Star Trek Animations for ALL Amiga machines, animations by Tobias Richter. Compiled by us.
- **Disc 424** The first of the popular Quickstart III discs containing some top-class utilities (including CLIwizard to tame the CLI) and three top-notch PD games (Gravattack, Invaders and Tiles) also includes VirusX 3.2 to banish all current forms of virus.
- **Disc 421** A special compilation of Ray-Traced images created by Adrian Purser via his own program, still under development, stunning 3D graphics and shows just what is possible.

Plus!! Issue six of our latest disc-magazine, Plus!! Free membership to Seventeen Bit (No obligations!) and access to the full range of PD discs

ALL THIS FOR ONLY £10.00 Inclusive of P&P etc!!!

All discs available to members at £2.50 each, coming VERY soon.. NEWSFLASH!! a brand-new disc-magazine for Europe created by UGA and 17Bit. Exclusive distribution in the UK by Seventeen Bit Software, write for subscription details (only £3 per issue).

Quickstart III pack still available for just £5, contains 3 hi-quality PD compilations.

#### SEVENTEEN BIT SOFTWARE



PO BOX 97, 1st Floor 2-8 Market Street, Wakefield, West Yorks, WF1 1XX Telephone 0924 366982 (24 hours)





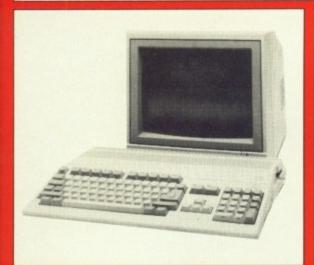
# TREBLE A COMPUTING





£359.99





#### AMIGA SOFTWARE

AIIII ON OUT THATE	
African Raiders	£13.50
Balance of Power 1990	£16.50
Battle Chess	£16.50
Bio Challenge	
Circus Attractions	
Falcon F16	£19.50
Falcon Mission Disk	
Fed. of Free Traders	
Forgotten Worlds	£13.50
Grand Monster Slam	
Gretzky Hockey	
Hawkeye	
Kick Off	
Kult	£16.50
Lords of the Rising Sun	£19.50
Mayday Squad	
Melinium 2.2	£16.50
Microprose Soccer	
Personal Nightmare	
Populous	£17.50
Powerdrome	£17.50
Hobocop	£16.50
RVF Honda	
Skweek	£13.50
Sorcerer Lord	
Spherical	
Targhan	
Tech	£16.50
TV Sports Football	£19.50
Weird Dreams	
3D Pool	£16.50

#### PRINTERS

#### C AMIGA

AMIGA 500

Inc. Modulator, Workbench 1.3, Mouse, Manuals + Leads

AMIGA SPECIAL GIFT PACK

All for only £399.99

Amiga 500 inc. Modulator, Workbench 1.3 and Manuals. 10 games and Photon Paint or 8 games, 24 PD titles + Joystick. Either of above plus 80 cap. disk box, 10 x 31/2" disks, mouse mat; dust cover

AMIGA 500 + DELUXE PAINT 2 + DELUXE PRINT £399.99 £489.99 **AMIGA 1 MEG** 

Inc. Modulator, Workbench 1.3, Mouse, Manuals + A501 RAM Expansion

AMIGA 500 + 1084S Med Res Colour Monitor £589.99 £549.99 AMIGA 500 + MUSIC X £549.99 AMIGA ART + ANIMATION PACK

Amiga 500 + 1/2 meg expansion + Deluxe Paint III

AMIGA B2000

Inc. B2000, XT Bridgeboard, A2090 20 mb Hard Drive + 1084S Monitor

A501 1/2 MEG RAM EXPANSION

£129.99

£1499.00

#### **MUSIC & SOUND**

Aegis Sonix V.2	£44.95
Aegis Audiomaster II	£59.95
AMAS	£77.95
Future Sound	£74.95
Perfect Sound	
Pro Sound Designer Gold	£74.99
DR T's KCS	
Eidersoft Midi Interface	
Datel Midi Interface	
Dynamic Drums	
Dynamic Studio	£59.99
Studio Magic	
Adrum	
Deluxemusic	£59.95
Music X (Out Now)	
Dr T's Midi Recording Studio	£52.95
	UIIS III E
The second secon	The second

A501 RAM Upgrade	£129.99
Workbench 1.3 Enhancer	
Disk Drive Cleaner	£4.95
Mouse Mat (Soft)	£4.50
A500 Dust Cover	£6.50
Amiga to Scart Lead	£9.95
Quickshot II Joystick	£8.50
50 x 31/2" Disk Labels	£1.50

**ART & ANIMATION** 

Lights, Camera, Action	
Zoetrope	£79.95
Deluxe Paint II/Deluxe Print Combo	£59.99
Deluxe Paint III	£67.99
Digiview Gold	£129.99
Aegis Videoscape 3D	£109.99
Comic Setter	£44.99
Movie Setter	£59.99
Minigen (Genlock)	£104.99
Deluxe Photo Lab	
Deluxe Video	£59.99
Photon Paint II	£79.99
Video Effects 3D	£109.99
Video Wipe Master	
Aegis Animator	£79.99
Aegis Animagic	£62.99
Aegis Video Titler	£84.99
Comic Setter Clip Art Disks	
Fantavision	£36.99
Icon Paint	£13.95

80 Capacity Disk Box	£6.50
Monitor Covers From	
A500 Power Supply	£62.50
Modulator	
B/W Handy Scanner	£209.99
Philips AV7300 Tuner for monitors	£69.99
Modems from	£89.99

#### MONITORS

Commodore	1084S	£259.99
Philips 8833		£229.99

Cumana 1 Meg 3.5" with on/off	£94.	99
NEC 1 Meg 3.5"	£89.	99
Vortex 40Mb	£499.	99
Amdrive 30Mb	£389.	99
Amdrive 50Mb	£489.	99
A590 20Mb (with optional ram upgrade)	£389.	99

All prices include VAT. Please send Cheques/P.O. Made payable to:

#### Treble H Computing

DEPT AC, CROMER HOUSE, CAXTON WAY, STEVENAGE, HERTS. SG1 2DF

★ CREDIT CARD HOTLINE: 0438 361738 ★

FAX: 0438 740 794

If you do send cash please send it Registered. All Goods are sent First Class/Registered. Please add £3.00 for outside U.K. Large Orders ie. Amigas, ST, Monitors etc. are always sent by courier. Please add £6.00, if you require Next Day Courier Delivery on other items.

All prices are correct at time of going to Press, and are subject to change without prior notice.



TOP QUALITY 31/2" DS/DD GUARANTEED **BULK DISKS** 



10		£7.95
25		£17.50
50	NEW PRICES	£33.50
100		£65.00
200		£128.00

#### PRICES INCLUDE LABELS

Add £5.50 for 80 capacity disk box when ordering disks or £4.50 when ordering 50 or more disks

UANTUM makes the
Testarossa of the hard drive
world. Beautifully produced,
devastatingly fast and every bit as
desirable. Unlike its Italian analogy,
the hard disc comes in varying
capacities. In this case it is an 100
megabyte drive.

Only one UK company, Power Computing, offers the Quantum drive as standard for the Amiga. It uses a selection of components to build the Turbo 3. The drive comes from the aforementioned Quantum, the gubbins – disc interface and room for 2 megs of expansion memory – from GVP, while the case and power supply are British.

Aimed very much up market from the Commodore A590, the Power Computing setup is a good deal more expensive. With the pick 'n mix options offered you can have anything from an A590esque 20 megabyte non-Quantum unit to the 100 meg review model with auto-boot board and 2 meg of ram. But the advantage of not following the Commodore route is only really marked when you set your sights high.

The most important part of the unit is the disc interface. Great Valley Peripherals has made quite a name in the US among the most critical audience, the Californian techies. Gregg Garrick at GVP started out producing a 1 meg ram expansion and hard disc interface for the A2000. He was joined by Gerrard Bucas who was formerly the vice-president of worldwide engineering at Commodore.

It is Gerrard's close contact with Commodore and understanding of how the Amiga works that has meant that GVP has a reputation for producing products even compatible with add-ons which usually cause problems.

HILE GVP has a philosophy that "the user who buys cheap buys twice", its hard drives are not horrendously expensive and the company has now sold over 8,000 of them, mostly in the form of A2000 hardcards – an interface with the drive bolted to the card.

Power Computing will be importing some of the very advanced GVP products including the 68030 speed-up card which runs 10 to 15 times faster than a standard Amiga. GVP really knows what it is doing.

While the Quantum is the fastest

drive under £1,000 the GVP interface cannot use Direct Memory Access (DMA) to the Amiga. Real DMA, which the A590 has, reads data from the disc and plonks it straight into the Amiga's memory. This creates a bottleneck at top speeds but the advantages of having such a fast unit, or even one of the slower Miniscribe drives, outweigh this disadvantage because the basic drive Commodore use is so slow.

There is some DMA going on. Data is read from the drive and DMA'd into the interface card's own ram before being read conventionally by the computer. Commodore has been a pioneer in the area of DMA – it was one of the features offered by the ancient Commodore 700, the 8 bit business machine.

An area in which GVP has pioneered is auto-booting. The Power Computing Turbo 3 will autoboot

# Bigger and better

On a clear disc you can seek forever. Simon Rockman laps up 100 megabytes of the fastest hard drive his Amiga 500 is likely to come across with Kickstart 1.3 straight into a Fast File System partition. This is possible because it uses rigid disc blocks. No, I'm not sure what they are either, but it sounds very good.

The drive is connected to the interface using SCSI, the Small Computer System Interface. This makes for a faster connection than the ST506 or XT interfaces used with some drives and means that you can hook up to seven more drives on to the same interface.

ATURE abhors a vacuum, so hard drives rapidly fill.
Keeping track of 100 meg of data rapidly becomes difficult, however neat you are with your directories.
One solution is to divide the drive up into several partitions. These can be

formatted individually and treated as separate AmigaDos devices.

There is a trade-off against this flexibility as each partition uses about 30k of the computer's ram. With an 100 meg drive and four partitions this eats into user memory.

The card has room for 2 meg of fast ram, although the difference between running in standard chip ram is barely noticeable. There will be a trend towards expanding Amigas beyond a megabyte when 1 meg Agnuses become available.

These chips are really useful for expanding the size of shapes and animations in art programs but have gained this space at the expense of non-chip ram. It turns the memory in the A501 expansion into chip ram. By adding fast memory you give programs more elbow room.

With lots of ram a hard drive rapidly becomes very hot. The Turbo 3 has plenty of room inside – a floppy drive can be put into the case if needed – but I'd have some real reservations about the reliability if it gets very hot outside. I have my Amiga set up in a shaded bay window, so if it gets hot I can open both windows and keep it cool. Sometimes I wear my shades and I look cool, too.

When a drive gets too hot it will give read errors. Save whatever you are doing, to floppy if necessary, and switch off. Let everything cool down. Don't put it into the fridge if it is very hot, magnetism is destroyed by rapid temperature changes, although a spell in the cooler might be a good idea before a long session at the keyboard. The worst reaction to a disc error message is to re-format the whole thing. While this is the sensible thing to do with a genuinely faulty disc, it will not do you any good with a hot drive. When the room cools down you will get more errors and lose all your data again.

To combat the heat problem, Power Computing has put a fan into the box. This may reduce the heat, but increases the noise made by the unit, a problem exacerbated by the sonorous properties of the metal case. Users who are never satisfied with what the manufacturer supplies may



like to fit a thermostatic switch so the fan only comes on when needed.

I'd like to leave my hard drive on the whole time, I do with the A2000 in the Amiga Computing office, but since I sleep within earshot of my A500 the combined noise of the fan and drive is too much.

It is good practice to leave hard drives on. The amount of wear caused by switching it on and off when the motor has to get a metal disc spinning from rest to many hundreds of rpm far exceeds the amount of wear the drive will suffer from if it is just left on. Of course if you aren't going to be using the machine for a while (What, you don't take your Amiga on holiday?), then it is best to switch it all off. Documentation supplied with the Turbo 3 is light, easy reading. One desktop published manual covers all flavours of Amiga and ST hard drives. Suitable icons allow the reader to sort the wheat from the chaff in this respect, but the

distressingly thin paperwork suffers from a lack of pictures.

ICHE marketing is Power's forte. While it used to sell a huge range of hard drives, the advent of some cheap, low-end systems has led the company to specialise in what it is good at. The best possible price/ performance ratio, concentrating on the system reviewed here and a slightly slower 48 meg drive for £499 excluding the memory.

As a package, the Power Computing Turbo 3 is brilliant. It may not be particularly pretty to look at but the only complaint I really have is that Power Computing wants it back; or perhaps that is a symptom of my disquiet. At £999 for the drive and £249 for the autoboot board and ram this is no impulse buy. The ram price is quite good when you look at what the raw chips cost and it may well fall soon, but whatever happens you aren't going to see any change from £1,000, which puts it out of the home user's league.

#### REPORT CARD

Turbo 3 Hard drive Power Computing 0214 273000 £1219.91

EASE OF USE.....

Simple plug in and go. Adding ram or auto boot needs better documentation or dealer help.

SOFTWARE ..... High standards of compatibility on the card are supplemented by the gimmicky inclusion of a 16 colour workbench using Icon paint.

Incredibly fast. This is what you are paying for. You would have to spend a great deal more for a drive to outstrip a

How many users can afford such speed. For most, the A590 is a better buy at half the price, albeit with a quarter of the capacity.

#### OVERALL

A truly desirable hard drive. If you use an Amiga for work it will increase your productivity. Games programmers please form an orderly queue.



Solar powered, see through calculator. FREE with orders over £25\*

Using state-of-the-art technology this calculator has an invisible membrane keypad, runs from solar cells (so you'll never need any batteries), and because it's only the size of a credit card it fits easily in your wallet or pocket.

This exclusive limited edition calculator can be yours for just £7.95 - or we'll send you one ABSOLUTELY FREE with every order over £25!

\* UK orders only (not subscriptions). Subject to availability





TO ORDER PLEASE USE THE FORM ON PAGE 95

Both Amiga audio digitisers give superb performance, unsurpassed at the price. No software is supplied, since they are fully compatible with Perfect Sound, Prosound Designer, Audiomaster, and Datel's Prosampler. Sampling rates up to 60KHz are possible depending upon the software. An audio lead is supplied for connecting to the headphone socket or line output of a radio, personal stereo, keyboard etc. Full instructions are included, and the mono version also has an L.E.D. overload indicator. A public domain "Sound Workshop" disk is available which has demo versions of Audiomaster & Perfect Sound etc. Sound etc.

MONO DIGITISER SOUND WORKSHOP DISK. ADAPTOR FOR A1000

#### **EXTERNAL 3.5" DISK DRIVES**



#### **AMIGA MONITOR & PRINTER LEADS**

#### **RGB TV & MONITOR LEADS**

We have leads to connect all AMIGAS to your TV or colour monitor provided it has an RGB input socket. All leads give a much clearer picture than using the AMIGA MODULATOR, permit ALL 4096 colours to be displayed and include the audio lead (to give stereo with stereo tv's).

ORDER AL 1 FOR TV's WITH 21 PIN EURO (SCART) SOCKET.
FITS PHILIPS, FIDELITY, SONY, GRUNDIG, NORMENEDE, ETC.
ORDER AL 2 FOR FERGUSON TV'S WITH 7 or 8 PIN DIN SOCKET.
MODELS MC01 & MC05, ETC.
MODELS MC01 & MC05, ETC.
ONLY £9.99
ORDER AL 4 FOR HITACHI & GRANADA TV'S WITH 7 PIN DIN
SOCKET. MODELS CPT1444, ETC.
ONLY £9.99
AMIGA TO MULTISYNC MONITOR (analogue RGB) AL11

MANY OTHER AMIGA MONITOR/TV LEADS LISTED IN OUR FREE CATALOGUE.

OUR LEADS ARE GUARANTEED TO WORK WHERE OTHERS DON'T! LEADS ALSO AVAILABLE FOR ATARI ST RANGE. PLEASE CONSULT US IF IN DOUBT

#### NEW — MONITOR SHARER

SHARE 2 COMPUTERS WITH ONE TV/MONITOR



ONI Y 69 99

£9.99

#### OTHER LEADS

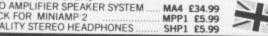
AMIGA 64 EMULATOR LEADS	AEL 1 ONLY £4.99
MODULATOR EXTENSION LEADS	MEL 1 ONLY CO OO
Amida Francisco — Parallel Type 1.5M long	AMP 1 ONLY 66 00
3 OM long	AMP 2 ONLY CO OO
AMIGA A500/BBC EMULATOR LEAD	RE1 ONLY 67 00
AMIGA A500 TO SERIAL (RS232) PRINTER 1 5m	DC1 ONII V CO OO
AMIGA ADOU TO MODEM (25W 'D') 1.5m	DCC ONLY CLO OO
AMIGA NULL MODEM LEAD — LINKS TWO A500s 1.5m	RSS ONI V 07 00
AMIGA TO HIFT LEAD 3M 2 PHONO PLUGS FACH FND	HI 1 ONLY CA OO
AMIGA TO HIFT LEAD 5m 2 PHONO PLUGS EACH END	HL2 ONLY £5 99
OTHER LENGTHS OF LEAD AVAILABLE - PLEASE SEE OUR CATA	ALOGUE
EXTERNAL DRIVE SWITCH FOR DF1	ADES ONLY 69 00
EXTERNAL DRIVE SWITCH FOR DF1 & DF2	ADEA ONLY CLOSO
PLEASE STATE WHICH AMIGA YOU HAVE WHEN ORDERING	ADE4 ONLT E10.99
TENDE SIMIL WHICH ANIGA TOO HAVE WHEN ORDERING	

#### MOUSE/JOYSTICK SWITCHER

#### NO MORE UNPLUGGING MOUSE WHEN JOYSTICK REQUIRED EXTENDS THE PORT FOR EASIER ACCESS SAVES WEAR & TEAR ON THE MOUSE PORT PUSHBUTTON SWITCH CAN BE OPERATED WHEN THE COMPUTER IS ON A VERY USEFUL GADGET — ONLY £10.99 order as DJA1

#### AMIGA MINI STEREO AMPLIFIERS

MINIAMP 2 combines a mini stereo power amp with two neat speaker units which connect directly to your AMIGA. They are ideal for use with mono TV's & monitors, & simply plug in for instant stereo sound. You'll be amazed at the difference. MINIAMP 2 WITH REMOTE VOLUME CONTROL & ALL LEADS ONLY £19.99



#### NEW — AMIGA MIDI INTERFACES MIDI INTERFACE 1 FOR A500/2000 OR A1000 .

MIF1 £29.99 This has MIDI IN, OUT & THRU sockets. Self powered. MIDI INTERFACE 2 FOR A500/2000 OR A1000 ......

instrument. Self powered.

#### SUNDRY ITEMS — BARGAIN PRICES

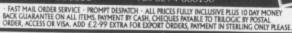
SONY 3.5" DISKS 100% Guaranteed DS/DD disks Lowest Prices ... Per 10 £12.99 & Postage Lowest Prices .... Per 25 £28.49 Post Free Lowest Prices ... Per 50 £55.99 Post Free Lowest Prices ... Per 100 £99.99 Post Free Lowest Prices ... Per 100 £99.99 Post Free Lowest Prices ... Per 100 £99.99 Post Free 3 ½ " DISK BOX FOR 50 DISKS. SMOKED LID, LOCKABLE, DSB4 ... ONLY £8.45 3 ½ " DISK BOX FOR 100 DISKS. SMOKED LID, LOCKABLE, DSB6 ... ONLY £12.49 A500 DUSTCOVER. ANTISTATIC TYPE, ADC1 ... ONLY £4.99 A4 NON-SLIP MOUSEPAD, AFM1 ... ONLY £4.99

WE ALSO STOCK AMIGAS, PCs, PRINTERS, MONITORS, HARD DISKS, MEMORY EXPANSIONS, VIDEO DIGITISERS, SELECTED SOFTWARE & BOOKS — PHONE FOR OUR FREE 20 PAGE CATALOGUE. TRADE ENQUIRIES WELCOME. Please add 75p part postage + packing to orders under £15.00

FREE CATALOGUE WITH ALL ORDERS EXPRESS DELIVERY £1.99 Extra



TRILOGIC, Dept. A.C. Unit 1. 253 New Works Road, Bradford BD12 0QP Tel 0274-691115



3.5" DISKS

3.5"

**LOCKABLE** DISK BOXES PE

CERTIFIED

++ BULK PURCHASES++ 150+

75, EACH

AT 72, EACH AT 71, EACH 250+ 350 + AT 70, EACH

PREFORMATTED

MAMIGA 89 EACH ALATARI ST 85, EACH

5.25"

CERTIFIED 24, EACH ++ BULK PURCHASES++

150+ AT 22, EACH 250+ AT 21 , EACH 350 + AT 20 PEACH

5.25" 50 CAPACITY £5.49 ALL BOXES HAVE A SMOKED TOP AND A STURDY BASE WITH DIVIDERS. 1

50 CRPACITY £5.99 100 CRPACITY £7.99



5.25 £1.00 S

#### шшш PERIPHERALS & SOFTWARE

C=10103.5"DISK DRIVE

MIGA MOUSE £24.99 FUTURE # SOUND 500 mini GEN

RENDALE 8802 GENLOCK £269.99

DIGIEVIEW GOLD £11999

GIS ANI Magic AEGIS SONIX

£62.99

DELUXE PAINT III

Kind Words 2.0

WE ALSO STOOK A WAST RANGE OF GAMES AND WARIOS OTHER PROGRAMS FOR ST, MMIGA, ATARI XE ... 4 VCS 2600. WALSO JOYSTICKS, CABLES, COMPUTERS, DUST COVERS ETC. W

BOOKS - PLEASE RING.



2 WATERLOO RD. CHESTER CH2 2AL

SALES: (0244) 312744 DESPATCH: (0244) 312675



NO PAYMENT WILL BE CASHED UNTIL ORDER IS DESPATCHED. - GUARANTEED!!! PLEASE ADD 75' ON ORDERS UNDER £15



5.25" DISKS

C=IS A REGISTERED TRADEMARK OF COMMODORE BUSINESS MACHINES #AMIGA IS A REGISTERED TRADEMARK OF COMMODORE BUSINESS MACHINES AEGIS IS A REGISTERED TRADEMARK OF AEGIS DIGIVIEW IS A REGISTERED TRADEMARK OF NEWTER DELUXE PAINT III IS A REGISTERED TRADEMARK OF ELECTRONIC ARTS KINDWORDS IS A REGISTERED TRADEMARK

MINIGEN IS A REGISTERED TRADEMARK RENDALE IS A REGISTERED TRADEMARK FUTURE SOUND IS A REGISTERED TRADEMARK

# Send a on your Amia

Now you can use an Amiga (or any other computer) to send correspondence in seconds to ANY of the many millions of fax machines in ANY part of the world.

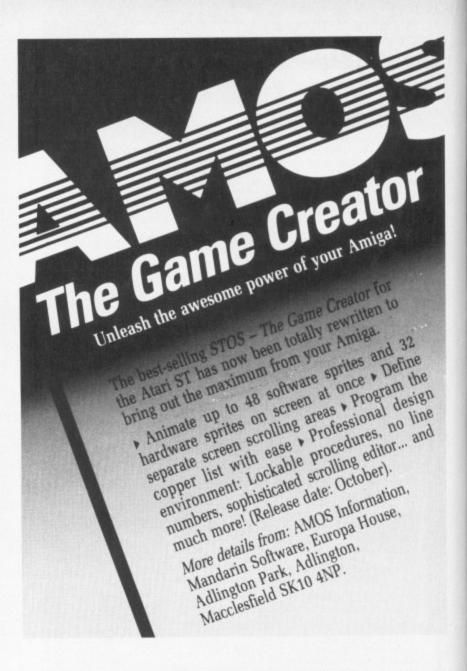
And if you want you can send the same fax to up to 500 different addresses simultaneously.

All you need, in addition to your computer, are a telephone, a modem and a subscription to MicroLink.

Fax is just another of the many new services now available on MicroLink, Britain's fastest-growing electronic mail provider.

electronic mail and NICCOLINK electronic mail and much, much more!

Details from 0625 878888



### TWO WAYS TO ENSURE YOU GET



- 1. Complete and mail subscription form on Page 95
- Hand this form to your newsagent.

Please reserve me a copy of Amiga Computing magazine every month until further notice.

- □ I will collect
- I would like it delivered to my home.

Address -

Note to newsagent: Amiga Computing should be obtainable from your local wholesaler, or contact Circulation Manager on 0424 430422



All prices include VAT/delivery

## AMIGA ACCESSORIES

	£119.00 . £95.00
MiniGEN Genlock adapter	£269.00
Pye 15" FST TV/Monitor model no.1185, inc. Amiga cable	
III OI OLLO IOIO I OI I IIIIIOIIIIOI IIIOIIII III	£229.00
Philips CM8833 colour monitor suitable for Amiga 500	£229.00
Philips CM8852 monitor as above, but higher resolution	£259.00
Philips TV Tuner AV7300, use with any composite monitors	£74.95
Word Perfect	£149.95
Superbase Personal	£69.00
Superbase Professional	£179.00
Logistix Integrated Spreadsheet	£74.95
A500 Dust Cover	£4.95

#### A-MAX **MACINTOSH EMULATOR**

An AMIGA COMPUTING Gold Medal winner An AMIGA COMPUTING Gold Medal winner allows Amiga users to emulate a Mac Plus in order to run Apple Mac and Mac Plus software. Mac disks can be read directly in when an external Mac Drive is connected to the cartridge hardware. Runs at least as fast as a Mac Plus! Software compatible with the A-Max includes MacPaint, MacDraw (V1&2), MacWrite, Pagemaker (V1&2) plus all versions of System. A-Max without 2 x Mac 128K ROMs ... £129.00 A-Max WITH 2 x Mac 128K ROMs ...... £249.00

#### vortex system 2000 hard disks

Now available - Vortex 'System 2000' hard disks, offering versatile high-capacity storage, suitable for use with the Amiga 500 and Amiga 1000. The units are of a high specification, with a formatted capacity of over 42Mb and an average access time of 45Ms. The system consists of a hard disk base unit, cables and an Amiga interface module, with utilities software including an autoboot facility and a hard disk backup utility.

System 2000 40Mb Hard Disk package ...... £529.00

All prices include VAT/delivery & cable



Hugely successful 9 pin printer, the Star LC10 provides 4 NLQ fonts (with 96 print combinations) at 36cps and 144cps draft. Has a large 4K buffer and IBM/parallel interface built in, includes a comprehensive front panel operation and features paper parking, allowing single sheets to be used without removing tractor paper.



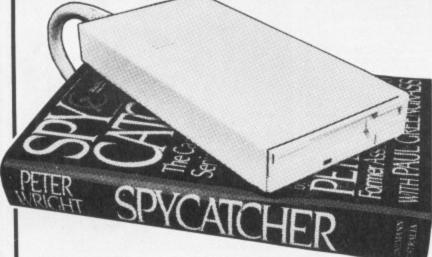
# Colour version also available,

Only £229.00

Prices include 2 extra black ribbons free of charge.

Without removing fractor paper.	
Star LC24-10 feature-packed multifont 24pin printer	£319.00
Star SF-10DJ / DK cut sheet feeder for LC-10 / LC24-10	£64.95
Star NB24-10 24 pin printer 216/72 cps,	
including cut sheet feeder and 2 extra ribbons	£499.00
Stan NX-15 good value wide carriage 9 pin printer	£329.00
Panasonic KXP1081 reliable 9pin 10" printer 120/24 cps	£169.00
Panasonic KXP1180 super new 9pin multifont 11.7" carriage	£199.00
Panasonic KXP1124 good quality new multifont 24pin	£319.00
Panasonic KXP-37 cut sheet feeder for KXP1180	£95.00
Panasonic KXP-36 cut sheet feeder for KXP1124	£109.00
Epson LX800 popular 9 pin 10" 180/25 cps	£179.00
Epson LQ550 24 pin 10" 150/50 cps	£319.00
Epson EPX-200 cut sheet feeder for LX800 / LQ500	£74.95
NEC P2200 budget 24 pin 168/56cps	£319.00
Citizen 120D budget 9pin 10" 120cps	£139.00
Citizen HQP-45 bargain value wide carriage 24pin	£399.00
Mannesmann-Tally MT-81 9 pin 130/24cps	£149.00
Widillioning in the property	

#### EXTERNAL DRIVES using Citizen drive mechanisms



- Suits Amiga 500 or Amiga 1000
- Top quality Citizen drive mechanism
- On / Off switch on rear of drive Throughport connector
- One megabyte unformatted capacity
- Slimline design
- Very quiet
- Long cable for location either side of computer
  Full 12 months guarantee

Ultra low price!

£74.95

inc.VAT and delivery

#### Now available - Our New Low-cost 5.25" External Floppy Disk Drives

We are now supplying the new, good quality RF542C 5.25" floppy drive compatible with the Amiga. Quiet in operation, the unit is colour matched to the Amiga, and has a throughport connector. The drive is capable of a number of configurations including 40/80 track switching and 360/720K format, giving full 'Transformer' compatibility.

Only including VAT

& delivery

OMEGA projects MIDI INTERBACE Good value, low cost compact MIDI interface, completely compatible with all music software currently available that uses MIDI cook littles. that uses MIDI capabilities. Connects to the serial port, and features diagnostic display indicators to enable the user to locate the source of a fault. Supplied with 30" serial connector lead full user instructions.

ONLY £29.95

DOUBLE TAKE! PYE TV/MONITOR (MODEL 1185)

High quality medium resolution colour TV/monitor now available to suit the Amiga. Features teletext, full infra-red remote control, SCART connector, Video/Audio input and headphone output connectors, 39 tuner presets, external aerial connector and a loop aerial. Supplied with connection cable.

£269.00

price includes VAT, delivery and cable

#### Disks

10 Bulk packed DS/DD 3.5" disks	
with labels, fully guaranteed	£11.95
25 bulk disks as above	£27.95
10 disks as above with plastic case	£13.95
25 disks as above, with 40 capacity	
lockable storage unit	£34.95
Kodak DS/DD 3.5" disks, top quality	
storage media. Box of 10	£17.95

#### How to order from All prices include VAT and delivery. Express Courier delivery £5.00 extra. **Evesham Micros**



Phone us with your **ACCESS or VISA** card details on: T 0386-765500

Send cheque, Postal Order or ACCESS/VISA card details

Govt., educ. & PLC orders welcome Same day despatch whenever possible All goods subject to availability, E.&O.E. Open to callers 6 days, 9.30-5.30

Evesham Micros Ltd **63 BRIDGE STREET EVESHAM** WORCS WR11 4SF © 0386-765500 fax 0386-765354

telex 333294 Also at: 1762 Pershore Rd., Cotteridge, Birmingham B30 3BH Tel: 021 458 4564

# OIN THE CLUB!

If you're looking for the best prices, best games, best offers and best service, then join Special Reserve. Or join Official Secrets if you're looking for more...

### Special Reserve

£5.00

#### Club Privileges All club members benefit from:

- Special offers: at prices you might not believel
   Bi-monthly Buyer's Guide each with details of 40 games, building to a valued reference.
   Membership card with privilege number, and folder for the Buyer's Guides.
   24-hour despatch of stock items. Most lines in stock.

- Each game sent individually by 1st class post. Most will fit through your letter-box.
   7-day sales hotline, open until 8pm weekdays, 10 to 5.30 Saturdays, 11 to 5 Sundays.
   Written notification of unexpected delays. Order query line manned weekdays.
   New titles may be ordered in advance and will be despatched upon publication.

- Instant refunds available on request for delayed titles
- No commitment, no obligation to buy anything and no "minimum purchase".

#### Best games at best prices

All the best garnes, carefully selected and available to members only at truly extraordinary prices. We're miles cheaper than elsewhere, so cheap that we can't advertise our individual prices. Below are a selection of offers for two garnes at about the same price you would normally pay for one. You can buy a pair of garnes at the same time as joining - or join now and select individually from our catalogue of over 1000 products. There is no obligation to buy anything.

#### Games Pick a pair of Amiga games

for both games including UK por	our catalogue. The "SRP" is our come stage and packing. vixEN	RRP SRP
3D POOL	VIXEN	.44.98 18.96
A.P.B	ELIMINATOR SKYCHASE	.39.9820.48
AFRICAN RAIDER	SKYCHASE	.39.98 19.48
DRAGON'S LAIR (REQUIRES 1 MEG)	WHO FRAMED ROGER RABBIT (1 MEG)	69.94 37.96
ELITE	NIGEL MANSELL'S GRAND PRIX	.49.94 18.48
F16 COMBAT PILOT	STRIKE FORCE HARRIER	.49.9421.48
F16 FALCON	.ELIMINATOR	49.98 25.48
FEDERATION OF FREE TRADERS	.SKYCHASE	.49.94 26.98
GUNSHIP	ELIMINATOR SKYCHASE STRIKE FORCE HARRIER PURPLE SATURN DAY	.49.9421.48
GRAND PRIX CIRCUIT	.PURPLE SATURN DAY	.49.9824.98
HONDA HVF 750	.TEENAGE QUEEN	.44.90 23.98
HYBRIS	TETRIS	.44.9816.98
KICK OFF	HOSTAGES	.44.90 21.48
LOMBARD RAC RALLY	NIGEL MANSELL'S GRAND PRIX	49 94 19 4R
MICROPROSE SOCCER	INCREDIBLE SHRINKING SPHERE	.49.94 24.48
MILLENNIUM 2.2	.CAPTAIN BLOOD	.49.94 24.98
POPULOUS	.HOSTAGES	.49.94 24.98
POWERDROME	PURPLE SATURN DAY	.49.90 24.96
RICK DANGEROUS	DEFENDER OF THE CROWN	.54.94 23.98
ROBOCOP	.CHAMPIONSHIP FOOTBALL (USA)	49.94 20.98
ROCKET RANGER	THREE STOOGES	.59.98 26.48
SILKWORM	ELIMINATOR	.39.98 19.98
SKWEEK	TETRIS	39 98 18 98
SUPER HANG ON	NIGEL MANSELL'S GRAND PRIX	.49.98 21.48
SWORD OF SODAN	HOSTAGES	49.94 22.48
TEENAGE QUEEN	VIXEN CHAMPIONSHIP BASKETBALL	.39.9411.98
THE NEW ZEALAND STORY	.CHAMPIONSHIP BASKETBALL	.49.98 20.98
THUNDERBIRDS	CAPTAIN BLOOD	49 90 22 98
TRIAD (COMPILATION)	HELLFIRE ATTACK	.49.98 14.48
TV SPORTS FOOTBALL (U.S.A.)	.THREE STOOGES	.59.98 26.48
WATERLOO	THREE STOOGES	.54.94 24.48
WAYNE GRETZKY HOCKEY	HOSTAGES	54 94 25 48

### SONY 3.5" DS/DD DISK with LABEL 89p each

AMIGA A500 + 5 TOP GA	MES &	TV MODULATOR	349.99
(INCLUDES HYBRIS, DEFNOR OF THE CROV	WN, STARG	LIDER, BARBARIAN AND NIGEL MAN	SELL'S G.P.
STAR NL10 PRINTER F&T, 120			179.99
AMIGA 512K RAM UPGRADI	E GENUI	NE ITEM WITH CLOCK	129.99
CUMANA 3.5" DISK DRIVE			99.95
MONITOR STAND FITS OVER A	MIGA. PL	ASTIC COATED STEEL FRAME	19.99
TWO PLAYER LEAD FOR PO			8.99
DUNGEON MASTER SOLU	TION B	OOK	2.50
PUBLISHERS CHOICE DES	K TOP	PUBLISHING	66.49
F16 FALCON MISSION DISK	12.99	POPULOUS DATA DISK	7.99
PHOTON PAINT	10.99	KIND WORDS 2 W/P	31.49
DELUXE PAINT III	51.49	PROTEXT W/P	69.99
SHOOT 'EM-UP CONSTRUCTION KIT	18.49	MOUSE MAT	4.99
PRINTER LEAD KONIX NAVIGATOR AUTOFIRE JOYSTICK	9.99	NL10 PRINTER RIBBON COMPETITION PRO CLEAR JOYS	6.99 STICK 13.99

#### Official Secrets

#### Confidential 32-page A4 bi-monthly glossy magazine

Confidential is written for people who take their fun seriously. If you are into Adventure, Strategy, FRPs, MUGs, PBMs, D&Ds, or if you would simply like to see more from behind the scenes then Confidential is essential reading. Regular features include Personnel File, Dead Letters, The Man in Black, Feature Articles, Brain Teasers, Diary, News, Competitions, and The Boss Upstairs. Club participation is welcomed.

#### Gnome Ranger Level 9's award-winning 3-part adventure

Starring Ingrid Bottomiow. "Go out and buy *Gnome Range*r pronto" said Atari ST User. If you already did please tick the box for a Surprise Alternative.

#### Help-Line Manned weekdays and Sundays

Advice and hints to help you solve most games.

#### Special Reserve Included in the membership fee

All the features and benefits of Special Reserve membership.

#### MYTA A mini-adventure by Magnetic Scrolls

Magnetic Scrolls, authors of *The Pawn, The Guild of Thieves, Jinxter, Corruption* and *FishI* have now written *Myth* exclusively for members of Official Secrets. Amazingly enough, it is included in the price of membership. Set in Ancient Greece, you play the part of a young god striving to prove himself worthy of immortality. You'll meet the Ferryman, have a chance to cheat Death, and do battle against the nine-headed Hydra guarding the gates to the Underworld. *Myth* includes the state-of-the-art Magnetic Scrolls parser and those incredible graphics. For most computers - disk only. Only to members of Official Secrets - Free - Out Now.

#### Adventures

	THE CONTRACTOR OF THE PARTY OF	6333	300
	ARTHUR (INFOCOM)	16	99
	BARDS TALE 1	7.	99
	BARDS TALE 2	16	47
	BATTLETECH	16	49
	BLOODWYCH		
	CHRONO QUEST	17	97
	DEJA VIJ 2	15	00
	DEJA VU 2 DUNGN MASTER (1 MEG) DUNGN MASTER EDITOR	15	40
	DUNGN MASTER EDITOR	7	40
	GALDREGON'S DOMAIN	**	00
	GOLD RUSHI		
	COLDEN BATH	- 7	40
	INGRID'S BACK	10	40
	IEWELS OF DARKNESS	0	40
	JOURNEY	10	40
	JOURNEY KING OF CHICAGO	7 00.	40
	KINGS QUEST 1.2 & 3 SET	17	49
	KRISTAL		
	KULT	17.	40
	LANCELOT	12	40
۱	LEISURE SUIT LARRY 2	10	40
ı	MANHUNTER NEW YORK	20	40
ı	MORTVILLE MANOR	20.	49
ı	NORD AND BERT	11.	49
ı	SHADOWGATE	. 0.	49
ı	SHADOWGATE	. 8.	49
ı	SHOGUNSILICON DREAMS	18.	49
ı			
ı	SILPHEED	16.	99
ı	SPACE QUEST 1 SPACE QUEST 2 TALESPIN ADV CREATOR	16.	49
ı	SPACE QUEST 2	16.	99
ı	TALESPIN ADV CREATOR	17.	49
ı	TIME & MAGIK	12.	49
ı	ULTIMA IV	16.	47
ı	WAR IN MIDDLE EARTH		
ı	ZAK McKRAKEN	16.	49
I	ZORK ZERO	20.	49
1	ZORK ZERO	rs.	
ı	Subject to stock		
1	(Magnetic Scrolls adventure		48
١	be back in stock soon)	- "	-
1	OF DECK ITI BROCK BOOK)		



Myth was rated at 90% by Keith Campbell of Commodore User. He said "Don't be put off by it being a mini-adventure....

placed by telephone.

Order Form Non-members please add membership fee	Special Reserve membership £5 UK, £6 EEC or £7 World
NameAddress	Official Secrets membership £22 UK, £25 EEC or £30 World with Gnome Ranger and Myth or with Surprise Alternative and Myth
Post CodePhone No  Computer*5.25"/*3.5"/*3.0"/*TAPE	Game
Payable to: Special Reserve or Official Secrets	TOTAL £
P.O. Box 847, Harlow, CM21 9PH Special Reserve and Official Secrets are trading names of Inter-Mediates Ltd. Reg. Office: 2 South Block, The Maltings, Sawbridgeworth, Herts CM21 9PG. Registered in England Number 2054713. VAT reg. no. 424 8532 51	*CHEQUE/*POSTAL ORDER/*ACCESS/*VISA (Including Connect, Mastercard and Eurocard)  Overseas orders must be paid by credit card Prices Include UK Postage and Packing EEC orders please add 70p per game World orders please add £1.50 per game

PLAYING God feels good. That's what has made Populous the best selling Amiga game ever. Never shy of a Good Thing, the lads from Bullfrog have a couple of sequels up their sleeves. Check out future review pages, but in the meantime there are more landscapes than the mind can comfortably handle to be dominated in the original.

Someone with an incredibly large mind is Mark Otway, and has put together a list which will help you on your way to becoming a less minor deity. Type in these passwords to get to later levels:

1 Hurtoutord	80 Badgoond
3 Timuslug	85 Corqazme
4 Caldiehill	90 Verytory
5 Scoquemet	95 Douolow
6 Swaver	99 Timqazal
8 Eoaozord	103 Killsodpal
11 Nimihill	108 Bilogojob
15 Alpoutond	112 Badkopout
19 Bugqueend	114 Hobepil
24 Lowinggick	118 Binypert
25 Qazitory	120 Loweat
27 Minmpe	127 Douazhill
34 Jostme	133 Scooxlug
35 Timpeold	134 Swaeahill
38 Swaingpal	139 Nimdicon
42 Morhippil	145 Immsodond
45 Ringbpal	150 Binqueme
47 Alplopout	155 Mininghole
49 Sadmpt	161 Hurtaick
55 Mingbdon	166 Swadeboy
59 Doupebar	172 Bilaspil
70 Swahipmet	178 Hobquet
75 Nimlopill	
CONTRACTOR AND ADDRESS OF THE PARTY OF THE P	

Sushitsune is the character you want

# Landscapes of the Mind

Max Tennant takes on the Japanese empire and wins an

ego so big that he thinks he rules the universe

to play in Lords of the Rising Sun if you want to get to grips with the strategy side of the game, as Andrew McGarrigle found out.

Playing Yoritomo needs some arcade skills which are best left until later on. To start with, under no circumstances must you try to take the centre, west or the two islands off Japan.

Make this mistake and it will be very difficult to get anywhere within the game. Concentrate on the Eastern castles first, as they fall particularly easily at the beginning.

You will then need to recruit more men, so try attacking the White Ronin with an army at full strength. This may intimidate him into joining forces with you. Don't attack if he wants to pass unhindered, he is no real threat just yet.

While you have been gathering strength in the East your brother Yoritomo has been causing havoc around central Japan. Take a rest at one of the castles and then, with high levels of men and health, take your brother on in battle.

If he is killed you will inherit his lands and generals. Even if you lose the battle it is worth fighting on.

under your command you can start on the rest of Japan. Before attacking castles check your siege skills, transferring skills with other generals if necessary. Similarly you should obtain sword skills for land battles and bow skills for defending castles.

Remember that there is safety in numbers, so if you manage to get five or six generals it will be a big advantage to pair them off.

When you have taken the mainland make a couple of visits to the Emperor at Koyoto. He will first give you the sacred scroll and then the sacred sword, but be careful – keep and eye on the encounter screen.

Enemies know they are under threat from you and your armies so they will send Ninjas to try and waste you. When you see a message press the left



Succeed with Populous, the best selling Amiga game ever

# .. NEW ... NEW ... NEW

We have improved the value of our legendary offers with the launch of our new Powerplay Packs which now include the Mega Release Populous, Buggy Boy, Ikari Warriors and other offers software titles. 10 blank disks, Photon Paint offers and morel Populous, the number one game for and morel Populous, the number one in all major and morel Populous, the number one in all major the Amiga has received rave reviews in all major magazines. CRVG 'Game of the Month', ZZAP magazines. CRVG 'Game of the Month', Score, Sizzler', The Games Machine 'Top Score', Sizzler', The Games

# 

Now available

with Philips

CM Monitor

#### POWERPLAY PACK 1

ALL OUR AMIGA A500 PACKS CONTAIN MACHINES WITH THE FOLLOWING STANDARD FEATURES

- 512K Ram
- 1 Meg Disk Drive
- 4096 Colours
- Multi Tasking Mouse
- Built-in Speech Synthesis
- Two Operation Manuals
- Operating System Disks
- All appropriate Connecting Cables



SAVE EVEN MORE WITH

#### POWERPLAY PACK 2

If you thought Powerplay Pack 1 was good value just look at our Powerplay Pack 2!

Only

AT NO EXTRA CHARGE! PACK 2 contains the super "Powerplay Pack 1" plus a CBM 1084S colour monitor - See those games - Hear those games . . . WITH ADDED REALITY!

(N.B. Powerplay Pack 2 doesn't include a TV Modulator)

#### GRAPHICS HARDWARE DIGIVIEW GOLD

THE COMPLETE START-UP PACK

Populous Buggy Boy Ikari Warriors Barbarian
Thundercats Terrorpods Art of Chess Amegas
Thundercats Terrorpods Insenty Fight Mouse Mat
Mercenery Compendium Tutorial Disk Mouse Mat
Photon Paint Amiga Tutorial Disk
Photon Paint Disk In Libery Casa Quality Amiga Dust
10 Blank 3.5" Disk in Libery Casa Quality Packs)
Cover TV Modulator (Not with Monitor Packs)

SEE WHAT WE MEAN ABOUT COMPLETE

(N.B. Certain games require

Digitise static colour images in IFF format at all resolutions from 2 to 4096 colours up to 640 x 400 pixels (requires B & W, or colour with B & W mode video camera, to digitise in colour)

ONLY £139.95

#### PANASONIC **VIDEO CAMERA**

High quality, high resolution mono video camera. Ideal for digitising.

DNLY £249.95

CALL FOR DETAILS AND PRICES OF ILLUMINATED COPY STAND FOR VIDEO CAMERA DIGITISING OF STILLS E.G. PHOTOGRAPHS, GRAPHICS ETC.

#### SUPER PIC

corder or video camera in a 50th of second. Includes Genlock to overlay ONLY £549.00

#### MINIGEN

Add computer graphics to your own video assily! Connect to your Amiga's RGB port and domestic video equipment to mix graphics and

MOVIE MAGIC AT ONLY

£113.85

#### POWERPLAY PACK 3

Take our NEW Powerplay Pack 2 and add a Commodore MPS 1230 printer for that

ENTERTAINMENT SYSTEM'

To substitute the MPS 1230 for another printer in our range, simply deduc £139.95 and add the price of the alternative chosen.

only...

#### POWERPLAY PACK 4

Take our NEW Powerplay Pack 3 replace the games software with an extensive business package . . . THE WORKS - Integrated w.p., mail merge, spreadsheet, pro database, multicolour graphics etc., etc.

To substitute the MPS 1230 for another printer in our range, simply deduct £139.95 and add the price of the alternative chosen.

WE MEAN BUSINESS AT JUST

#### ACCESSORIES

#### TAILORED AMIGA **DUST COVERS**

ONLY £4.95

(Also available for most monitors/printers etc.)

#### JOYSTICKS .

ZIPSTICK SUPERPRO

ofessional quality with that "Perfect Feel" tofire, 12 month warranty.

MICROBLASTER

#### COMMODORE

**A501 RAMPACK** 

Genuine CBM 512k EXTRA RAM with real time clock does NOT invalidate Amiga warranty!

**CBM 3.5" DS/DD BLANK DISKS** 

**BULK PACKED DISKS** 

Ten 3.5" DS/DD Disks OR with library case

Call for quant discounts

£14.95

£139.95

NEW LOW PRICE

£15.95

£12.95

£9.95 £10.95

#### HARWOOD'S - THE NAME YOU CAN TRUST

ORDERING MADE EASY
ORDER BY PHONE-Simply call our 24hr Hotline
using your Access/Visa or Lombard Charge Card.

ORDER BY POST-Make cheques, bankers-building society drafts or postal orders payable to GORDON HARWOOD COMPUTERS (N.B. Personal or business cheques require 7 days clearance from date of receipt before despatch)

PAY AT YOUR BANK-If you wish to pay by Credit. Giro Transfer at your own bank, phone for details FREE POSTAL DELIVERY goods in UK Mainland (5-7 day delivery) OR COURIER SERVICE - Add £5 per major item next working day delivery UK Mainland (Orders normally despatched on day of receipt of payment or cheque clearance

#### COMPARE OUR SERVICE After you've purchased from Harwoods we'll

()

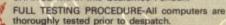
still be here to completely satisfy you should any problems arise.



12 MONTH WARRANTY - If goods prove to be faulty within 30 days of purchase they will be replaced with A NEW UNIT. For the remainder of the Guarantee Period, all warranty repairs will be made FREE OF CHARGE!



COLLECTION FACILITY-Any faulty computer or monitor will be collected from your home FREE OF CHARGE within this Guarantee Period!!!



#### CREDIT TERMS

Gordon Harwood Computers are licensed brokers and facilities to pay using our Budget Account Scheme are offered on most items. APR 35.2%

12-36 month credit sale terms are available to most adults, simply phone or write and we will send written details along with an application form. (Applications are required in advance.)



Credit terms with or without a deposit can be tailored to suit your needs.

# ortlolio



This month Diego has shot holes in the prices of the STAR LC10 range! At only £179.95 for a Mono LC10 and a remarkable £209.95 for the COLOUR version you'll SAVE EVEN MORE !!!



#### 30 MEGABYTE A500 HARD DISK

Real power for your Amiga A500, connects directly through sidecar expansion bus. Ultra-reliable, built-in power supply styled to match your Amiga A500.

#### MEGA STORAGE AT ONLY п

Also available 50 mb version £475 includes 1 yr. replacement warranty FREE, optional 2 yr. available

#### COMMODORE A590 20Mb HARD DISK FOR AMIGA A500's

- Autoboot on Amiga (1.3 Kickstart only)
- Sockets for 2Mb RAM expansion
- DMA

NEW

#### **VORTEX 40 MEGABYTE HARD DISK**

New concept in disk storage

Amiga A500/1000 (others available)

#### HARWOODS SUPERSLIM 3.5" DRIVE

- Throughport
- On/Off isolator switch

£84.95

#### **CUMANA DISK DRIVES**

**CAX 354** 3.5" 2nd Drive **CAX 1000** 

£94.95

5.25" 2nd Drive

(Worth £10.95)

£129.95 (Worth £9.95)

SAVE MONEY SAVE DATA!



#### PRINTERS

All printers in our range are dot matrix and include the following features

Standard centronics parallel port for direct connection to Amiga, PC's, ST, Archimedes etc. Tractor and friction paper feeds and FREE connector cables.

CITIZEN 120D

Full 2 year warranty Very reliable low cost printer, interchangeable interfaces

available for RS232 or Serial type for CBM 64 etc.

#### **COMMODORE MPS 1230**

Manufactured by Olivetti, built in dual Centronics and 64 type serial interfaces. Connects to C84/128/16/+4 and Amiga etc.

#### STAR LC10 MONO

Multiple font options from front panel, excellent paper handling. C64/128 version available. £179.95 £100:85

#### STAR LC10 COLOUR

Colour version of the popular LC10, allowing the effect of full colour on screen dumps (requires colour printer driving software). C84/128 version available. £209.95 £239.95

#### **STAR LC 24 10**

24 Pin version of the popular LC series with exceptional letter print quality.

CHECK OUT DEALIN' DIEGO'S AMAZING OFFER ON STAR PRINTERS — BUT HURRY !!!

FREE! PRINTER CABLES



#### **MONITORS**

#### **COMMODORE 1084S**

Manufactured by Philips, 14" High Resolution Colour, Stereo Speakers. Allows full use of your Amiga's 80 column text display and High Resolution or Multi-Colour Graphics

AMAZING VALUE AT ONLY

#### PHILIPS CM 8833

14" stereo colour monitor with anti-glare tube and green screen switch for even better clarity of text

> SUPER SAVER AT ONLY

#### FREE LEADS!

1084S - Supplied with leads for Amiga, C64, C128 and standard colour IBM PC compatibles. CM 8833 - Please specify your computer for correct FREE connection leads.

#### AWARD MAKER PLUS

Creates certificates and awards in a variety of styles, then prints out in black or colour,

landscape or portrait. **PROFESSIONAL PAGE V1.2** 

The ultimate in full colour Amiga DTP packages.

#### SOFTWARE

PUBLISHERS CHOICE

€89.95

The package contains 'Kindwords V2', 'Pagesetter V1.2', 'Artists Choice' and 'The Headlin

X-CAD DESIGNER

Perfect start in computer-aided design.

AEGIS VIDEO TITLER

Use with Genlocks, e.g. Minigem etc.

THE WORKS Integrated w.p., mailmerge, spreads

database, multicolour graphics etc.

WORKBENCH 1.3 Latest version of Amiga 0.S.

WE STOCK A VAST RANGE OF SOFTWARE - TOO MUCH TO LIST HERE - AT COMPETITIVE FOR A WHOLE RANGE OF COMPUTERS AND GAMES CONSOLES, PHONE US NOW - AT COMPETITIVE PRICES

# 24HR ORDER LINE - 0773 836781

#### VISIT OUR SHOWROOM

Please call to see us where our full range of advertised products AND MORE is on sale. We will be only too pleased to demonstrate any item of hardware or software and a host of peripherals and accessories

#### REMEMBER WE ARE NOT JUST ANOTHER MAIL ORDER COMPANY

All prices are what YOU PAY, and there are NO HIDDEN EXTRAS. VAT & Postage are included and are correct at time of going to press.

E. & O.E. Offers subject to availability and are currently advertised prices



# GORDON

ompute OOD COMPUTERS

DEPTA C O. 69-71 HIGH STREET ALFRETON · DERBYS · DE5 7DP Tel: 0773 836781 Fax: 0773 831040 mouse button as quickly as possible. With a bit of luck the offending general will commit seppuku.

Providing you survive the ninja attacks, the next task is to take the remaining two islands and the last four castles. This will stop your enemies from re-arming when they retreat. As an enemy takes to the water to flee you will be waiting for them at whichever one of the islands they choose to seek refuge.

With Japan laid bare in front of you take the last castle and with it the title of Shogun.



AVING just completed a roller coaster tour of America, Justin Garvinovic is back at his copy of DevPac knocking out pokes for the toughest games. This month it is Forgotten Worlds.

Type the program into AmigaBasic and save it to disc. Then put the Forgotten Worlds into DF0: and run the Basic program.

You will get a disc error, ignore it and everything will be just tickertyboo. Tight for time and space this month, so we'll have to close now. Just time to say that if you have some tips you can win yourself one of the mysterious jiffy bags which litter the *Amiga Computing* office floor.

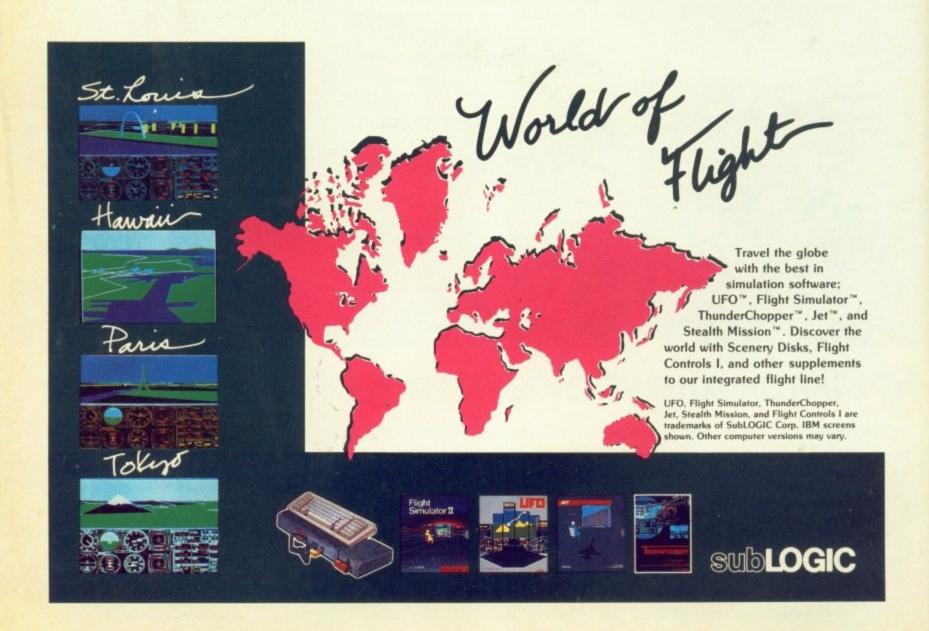
Each bag contains a superb game and a Konix speedking joystick. Send your tips, on disc if possible, to MTH, Amiga Computing, North House 78-84 Ongar Road, Brentwood, Essex, CM15 9BG.

REM INFINITE ENERGY FOR
REM 'FORGOTTEN WORLDS'
REM COPYRIGHT 1989 BY JUSTIN G.
REM FOR AMIGA COMPUTING.

tot=0
FOR n=327680% TO 327826% STEP 2
READ a\$
a=VAL("&h"+a\$)
tot=tot+a
POKEW n,a:POKEW (n+148),0
NEXT n
IF tot=583549% THEN GOTO section2
PRINT "there's an error in the data."
END
section2:

CALL cheat
DATA 6100,004A,337C,0002,001C,42A9
DATA 002C,237C,0000,0400,0024,4BF9
DATA 0003,0000,234D,0028,4EAE,FE38
DATA 4CFA,00FF,0016,48F9,00FF,0006
DATA A300,2B7C,0006,A300,00C6,4EED
DATA 000C,33FC,4E75,0006,A9DA,4EF9
DATA 0006,A400,2C79,0000,0004,93C9
DATA 4EAE,FEDA,45FA,009C,2480,43FA
DATA 0086,4EAE,FE9E,43FA,002E,4280
DATA 4281,41FA,0014,4EAE,FE44,43FA
DATA 001E,45FA,006A,234A,000E,4E75
DATA 7472,6163,6B64,6973,6B2E,6465
DATA 7669,6365

Infinite energy for US Gold's Forgotten Worlds



# cousins.

#### Colour disappointment

FOLLOWING your report on the Citizen HQP-40 I bought one for use with my Amiga 2000 system and PC bridgeboard. My problem is that despite what the dealer told me it does not appear to be operating in 24 pin mode or formatting pages properly with all my software.

Running off Workbench 1.3 the machine only operates in EpsonX emulation and will not reproduce the wysiwyg displays of Excellence!, Pro. Page, Photolab and other programs. Selection of the EpsonQ 24 pin driver makes the system crash. The same problems occur with PC software. No software seems to drive the HOP-40 directly, and all emulations have minor to diabolical bugs.

The paper handling on my machine is diabolical, with consequent disastrous colour output. My time is too limited to write my own printer drivers and the advertising and review say this is unnecessary.

> S. Ian Marriott. Dunstable, Beds.

Commodore does not know about the HQP-40 and Citizen asked if the "Omega" was a kind of PC. However, we suspect the problem would be quite simply resolved with a new copy of the EpsonQ printer driver.

Take vour Workbench enhancer pack back to the dealer and get a new extras disc. The paper handling on our very hardworking HQP-40 is fine. It is often left doing very long print runs and we have the confidence to leave it unattended.

There may be some problems with alignment on your machine which Citizen (0895 72621) should be able to fix when you have the new driver. Impact printers, however many pins they have, will always produce muddy results.

#### Workbench bug

WHILE I was setting up a disc to work the way I wanted I had a strange bug. When I copied files together the .INFO files worked and appeared as icons under Workbench, but when I copied the files separately the .INFO files didn't work. Is there something else on the disc I need to copy?

Ted Decker. Havering.

This is a great bug unmasked by Mark Tilley of Arnor. The .info file must be typed in lower case. So if you renamed fred.info to fred.INFO the file will stop working.

#### **Best US buys**

SCANNING some American magazines I have been struck by the incredibly low hardware and software prices enjoyed by our colonial

I am planning to go to the States later this year and it occurred to me that this might give me a chance to buy some Amiga goodies while over there.

I realise that my choice will be limited by the fact that everything over there runs on 110 volts and displays on NTSC monitors and TVs. and that warranty could present problems - but surely there is something I could pick up over there to "beat the system".

> Richard Whiting, Sheffield.

Most, but not all software will work. A program has to be deliberately "fixed" so that it will not work, this being usually done for copyright reasons. Examples are Dragons Lair and Zoetrope. If you want to check

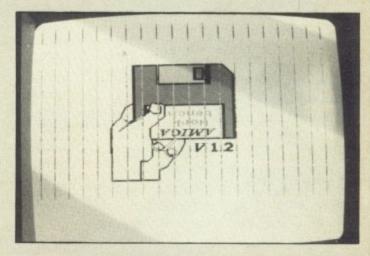
#### Oh dear!

WHILE playing with my computer lots of vertical lines appeared on the screen, like the one in the photo. Thinking that it was a virus I switched off and turned back on a few minutes later. Unfortunately the lines remained. Even when I inserted a disc the lines staved. The drive whirred and stopped but it didn't read the disc.

Sometimes the whole screen is blue with the black outline of the disc and hand. Sometimes the disc is white. Even if I leave the computer switched off for several days the fault remains.

Chi Chung Wong, Hampton, Middx

Your fault is a blown custom chip we killed two Amigas which exhibited this fault. Your machine



will have to be repaired; either take it back to the place where you bought it or contact DPCE, Commodore's main service centre on 0952 290488.

The problem is usually caused by plugging in and unplugging peripherals when the power is on. If your machine is not covered by the warranty the repair is likely to be expensive.

up call the software house while you are over there.

Hardware is usually OK, things like processor accelerators and ram expansions will work perfectly. There are some great "toys" you can't get here like the Boing! optical mouse and the Haitec 3D glasses.

A good buy might be a SCSI hard drive interface, getting the actual drive and PSU in the UK.

You should check out the prices here first. Most games are more expensive in the US.

#### The need for speed

FOR some time I have been considering buying the 68020 Midget Racer Board for my A500, but first I was wondering if you could answer a few questions. I'd like to know what 32 bit ram is, and if the 68020 needs it to access the full power of the chip and how much does it cost?

Would the chip work faster with static ram? If so could I plug S-ram into the computer or a Starboard 2? Is there anyone who produces ram expansion boards for the A500 that can accept 1 megabit rams and would these fit into a Starboard 2?

Finally, at a later date could I remove the 68020 and plug in a 68030 or 68040 straight into its socket?

Charles Frank, Shropshire.

The 68020 is a 32 bit processor. However the Amiga is only a 16 bit computer. This means that for every 32 bit number the Amiga wants to work with it has to read two 16 bit numbers.

On the big CSA 68020 cards for the Amiga 2000 the ram is connected directly to the processor so it does not have to go through the 16 bit bottleneck caused by the Amiga's 16 bitness. It is very much faster, nearly twice the speed, but it is also very much more than twice as expensive.

The CSA board which Amiga Computing reviewed in August 1988 costs £5,000 and is not available for the A500.

The story is similar with static ram. If the memory is directly connected to the processor it can run faster, but using a normal memory expansion it



is not possible to use static ram, and would provide no advantage other than low power consumption.

The saving in electricity bills would be insignificant compared to the cost of expensive static ram.

The MicroMegs expansion from MAST (077-082 234) uses 1 megabit ram chips. It plugs straight into the A500 (you don't need a Starboard), and costs £99.95 with the ram on board.

Upgrading from a 68020 to a 68030 is not too difficult technically, thanks to some brilliant work by Motorola. However, it will be an expensive move. And first production of the 68040 is so far off it is unlikely to be a realistic proposition.

#### **Dutch courage**

CRAIG Thornton's suggestion that copying software is a criminal offence is ridiculous. In the Netherlands I am in high school and exchange software with friends so we don't have to pay for it. We swap programs like WordPerfect. I had to save for a long time to buy my Amiga and so can't afford a program like that.

The copying of programs is as much accepted as copying music cassettes if you don't make money out of it. If you sell programs for money then you are a criminal. What you suggest makes thousands of computer-freaks criminals.

Tatjana Varen Kamps, Altveer, The Netherlands.

People like you don't deserve to own computers.

#### **BBC Blues**

THERE does not seem to be much educational software around for the Amiga. My sons are of primary school age and are having great fun with all the games, but I would like them to have some educational programs as well. I am very pleased with Fun School 2 but there doesn't

seem to be much else.

I understand I could use software for the BBC Micro if I have the BBC Emulator. How would I use this? Would I have to buy a second disc drive for the larger 5.25in discs or could I use the BBC Compact discs in the Amiga's drive?

B. Bates, Shepperton, Middx.

Things are bleaker than you think. To get a program from a BBC disc to an Amiga you need a BBC Micro which has to be linked to the Amiga with a serial lead.

There is no software for the Amiga which will read any of the multitude of BBC disc formats. This is because the BBC Emulator is aimed at schools which already have BBC Micros.

You might be able to arrange to borrow a BBC and transfer the software to Amiga discs, but buy carefully. Even the BBC is not flush with good educational software.

A better bet might be to look at the teaching applications opened up by some of the better "real" software. Children can learn a lot from things like Deluxe Paint, Scrabble (although we suspect that is too advanced for your children) and things like Notepad.

#### **Datel Delays**

WHEN a local supplier told me that it would take him a week to order an eprom blower for my Amiga I called Datel Electronics. I was told that the units were in stock and could be despatched immediately. So I ordered one on my credit card.

When the eprom blower had not arrived after a week I called them to be told that there had been "a delay" but "all orders had now been sent out". A week later I called to be told that there were problems and the eprom blowers were not in stock.

In the meantime my local dealer had received his stock and so I cancelled my order, and was told that my Access account would be credited. They should not have debited my account in the first place.

This is not the first problem I have had with Datel, although I won't be giving them the opportunity to cause any more.

> Steve Rackley, Camberley, Surrey.

# BYTEBACK





SERVICE . . and the keenest prices

Ring us now! 0636-79097 we're programmed to help

**GUARANTEED RETURN OF POST Delivery on ALL Stock items!** 

INTERNATIONAL ORDERS WELCOME

GAMES ONLY!
African Raider16.90
After Burner 16.90
Alien Legion
Allen Syndrome16.90
Alternate Reality
Astorath19.90
Baal
Balance of Power 1990 16.90
Ballistix
Bards Tale
Bards Tale 2 16 on
Batman the Caped Crusader 16 90
Battle Chess
Battlehawks 1942
BLOODWYCH (Aug)16.90
Billiards
Blasteroids 16 90
Blood Money 16.90 Bombouzal 13.90
Breech
Buggy Boy 16 go
Captain Blood 16.90 Carrier Command 16.90
Castle Warrior
Chessmaster 2000
Chrono Quest
Chuckie Edd 2
Colossus Chess X
Cosmic Pirate
Dark Fusion
Dark Side 10 00
Demons Winter
NEW ZEALAND STORY 19.90
Pragon Ninja
Federation of Free Traders 10 on
Ferrari Formula One
Jet
*Scenery 7 or 11 16 00
*Scenery 7 or 11
29.90
29.90
29.90
Scenery 7 or 11   16.90
29.90
29.90
Jet         29.90           'Scenery 7 or 11         16.90           'European scenery         13.90           'Japan scenery         13.90           Football Director 2         13.90           Forgotten Worlds         16.90           Fright Night         13.90           Fusion         14.90           F-16 Combat Pilot         19.90           Galdregons Domain         13.90           Garnes – Winter Edition         14.90           Garlield         16.90
Jet         29.90           *Scenery 7 or 11         16.90           *European scenery         13.90           *Japan scenery         13.90           Football Director 2         13.90           Football Manager 2         13.90           Forgotten Worlds         16.90           Fright Night         13.90           Fusion         14.90           F-16 Combat Pilot         19.90           Galdregons Domain         13.90           Garnes – Winter Edition         14.90           Garnfield         16.90           Gauntiel II         16.90
Jet         29.90           *Scenery 7 or 11         16.90           *European scenery         13.90           *Japan scenery         13.90           Football Director 2         13.90           Football Manager 2         13.90           Forgotten Worlds         16.90           Fright Night         13.90           Fusion         14.90           F-16 Combat Pilot         19.90           Galdregons Domain         13.90           Garnes – Winter Edition         14.90           Garlield         16.90           Gauntlet II         16.90           Grand Monster Slam         13.90
Jet         29.90           'Scenery 7 or 11         16.90           'European scenery         13.90           'Japan scenery         13.90           Football Director 2         13.90           Foorball Manager 2         13.90           Forgotten Worlds         16.90           Fright Night         13.90           F-16 Combat Pilot         19.90           Galdregons Domain         13.90           Garnes – Winter Edition         14.90           Gartield         16.90           Garand Monster Slam         13.90           Gunship         16.90           Gunship         16.90
Jet         29.90           *Scenery 7 or 11         16.90           *European scenery         13.90           *Japan scenery         13.90           Football Director 2         13.90           Football Manager 2         13.90           Forgotten Worlds         16.90           Fright Night         13.90           Fusion         14.90           F-16 Combat Pilot         19.90           Galdregons Domain         13.90           Garnes – Winter Edition         14.90           Garfield         16.90           Gauntlet II         16.90           Grand Monster Slarm         13.90           Gunship         16.90           Hybris         16.90           Indiana Jones Last Crusade         16.90
Jef   29.90
Jet         29.90           'Scenery 7 or 11         16.90           'European scenery         13.90           'Japan scenery         13.90           Football Director 2         13.90           Football Manager 2         13.90           Forgotten Worlds         16.90           Fright Night         13.90           Fusion         14.90           F-16 Combat Pilot         19.90           Galdregons Domain         13.90           Garnes – Winter Edition         14.90           Garnield         16.90           Gauntlet II         16.90           Grand Monster Slam         13.90           Gunship         16.90           Indiana Jones Last Crusade         16.90           Interceptor         16.90           International Karate Plus         16.90           Jaws         13.90
Jet

<b>发生的现在分词的现在分词的</b>	
GAMES cont. ON	LY!
Lords of the Rising Sun	. 19.90
Manhunter New York	. 19.90
Millenium 2.2	16.90
Mortville Manor	12 00
Microprose Soccer	. 16.90
Pacland	. 13.90
Pacmania	16.90
Pioneer Plague	16.90
Police Quest	. 16.90
POWERDROME1	9.90
Populous	.16.90
R-Type Real Ghostbusters	. 16.90
Rick Dangerous	16.90
Robocon	18 00
Homantic Encounters (18+)	13.90
Running Man	16.90
Scrabble Deluxe	13.90
S.D.I	16 90
Shadowgate	16.90
Skweek	13 00
Space Quest II	16.90
Speedball	16 00
Steve Davis World Snooker	13.90
Strip Poker 2+ *Data Disk	9.90
Super Hang On	10 00
Sword of Sodan	16.90
Tales of Lore	16.90
Thunderbirds	19.90
Test Drive II	9.90
	0.000
Time Scanner Torn and Jerry	16 00
Total Eclipse	16.90
TV Sports Football	19.90
Ultima IV	12 00
War in Middle Earth	16 90
WEC Le Mans	16.90
Willow	16.90
Zak McKracken	10.90
Zany Golf	16 90
3D Pool	16.90
COMPILATIONS ONI	LY!
THE STORY SO FAR	13.90
Buggy Boy, Beyond Ice Palace	
PRECIOUS METAL Xenon, Capt. Blood Crazy cars, Arkanoid II	16.90
TRIAD - 3 Game Pack	10.00
Barbarian, Starglider Defender of the Crown	18.90
HIT DISKS (Vol.1)	16.90
Goldrunner, Karate Kid II Jupiter Probe, Slaygon	10.80
HIT DISKS (Vol.2)	16.90
Major Motion, Time Bandit Leatherneck, Tanglewood	10.50
MEGAPACK	16.90
Plutos, Mouse Trap, Seconds Out Winter Olympiad, Suicide Mission	
	-

HARDWARE	ONLY!
*** ALL COMPUTERS INC Mouse, Manuals, Modulator, Disk Drive, (NEW) Kicks	Tutorial 1Mb
AMIGA A500 Computer	
AMIGA A500 Games Pack	£39
1084-S Monitor	259.0 129.0 89.9
STAR LC10 Printer (Mono) STAR LC10 Printer (Colour)	129.0
Cumana 3.5" 1Mb Disk Drive	99.0
SPECIAL PACKS	ONLY
PACK A	
PACK B	<del>48.90</del> 269.90
ART & MUSIC	ONLY!
Aegis Animat/Images Comic Setter	49.90
Movie Setter	49.90
Deluxe Paint 3	
Deluxe PhotoLab Deluxe Video Deluxe Music Con. Set Design 3D	
DIGIVIEW GOLD (PAL)	
antavision	17.90
Pro Sound DesignerPhoton Paint 2	69.90
cultp 3D (PAL)he Director	59.90
Iltimate Sound Tracker	27.50
BOOKS (Abacus)	
Imiga for Beginners	18.90
System Programs	32.90
Disks to accompany books	13.90
LANGUAGES	ONLY!
ztec C Professionalambridge Lisp	99.90
Hisoft Basic	64.90
odula 2 Developers	114.90

	CHILDRENS ONLY!	١
	AB Zoo	0
	Fun School 2 (6 to 8) 13 9	٦
-	Fun School 2 (Over 8)	0
-	Kid Talk 29.90 ConSOUNDtration 27.50	٩
-	Match-lt	0
9 000 00	Robot Readers - with Speech!	
0	Aesops Fables	)
)	Chicken Little 19.90 Little Red Hen 19.90	3
1	Three Little Pigs	j
5	DICKS (DO DO	,
	DISKS (DS/DD 3.5") ONLY! KAO Disks - 100% Guaranteed!	ı
-	109.90	)
)	5039.90 10074.90	)
	SONY Boxed - 100% Guaranteed!	
	10 13.90	
	50 59.90	
	ACCESSORIES ONLY!	
	Locking Disk Box (40+) 7 90	
	Locking Disk Box (80+)	
	Furry Mouse Cover! 6.90	
	Mouse Bracket 3.90	
	Mouse Mat 5.90 Keyboard Cover 5.90	
	UTILITIES ONLY!	
	WORKBENCH 1.3 (NEW)14.90	
	AmigaDOS Toolbox	
	BBC Emulator	
	RAM Manager2.50	
	X-Copy29.90 (Superb Disk Copier)	
	City Desk79.90	
	Descartes24.90	
	DigiCalc	
	Home Accounts	
	Kind Words	
	Publishers Choice	
	Kind Words 2, Headline Fontspack Artists Choice Artpack	
	SuperPlan69.90	
	Superbase Personal 2	
	Superbase Professional 174.90 Project D 29.90	
	JOYSTICKS ONLY!	
	Joystick & Mouse Extension4.90	
	Joystick Lead - 3 metres!	
	Challenger 6.90	
	Quickshot II         7.90           Navigator         12.90	
	Cobra (NEW)	
	Competition Pro 5000	
	Competition Pro Extra	
	Euromax RACEMAKER26.90	
	(Yoke style game controller)	

The above is just a small selection of our VAST stock of AMIGA software! Callers welcome; Normal Office Hours - 24 Hour Telephone Service!



Cheque, postal orders or credit card facilities are available





#### SPECIAL OFFER ★ SPECIAL OFFER

Buy any Amiga/Atari/PC Pack and receive our FREE SPECIAL STARTER PACK which includes 10 Public Domain Disks plus 10 blank disks. Existing Amiga users can buy our SPECIAL PACKS for £30 inclusive.

Please ring for details **AMIGA A500 PACKS** 

PACK A Amiga A500+Mouse+Modulator+Our Special Pack	£370_00
PACK B Amiga A500+Mouse+Modulator+10 Games+Our FREE Special Pack	£395.00
PACK C Amiga A500+Mouse+Modulator+10 Games+Phonton Paint+Our FREE Special Pack	£399.99
PACK D Amiga A500+Mouse+Modulator+9 Games+Joystick+Our FREE Special Pack	£399.99
PACK E Amiga A500+Mouse+Modulator+512KB RAM Expansion+Dragons Lair+Our Special	
Pack	£548.99
	£649.99
PACK G Amiga A500+Mouse+Modulator+A1010 Disc Drive+Aegis Sonix+Our Special Pack	£548.99
	.£95.00
	00.0383
For AMIGA B2000 ring for our special price.	
ATARI 520STFM/1040STFM	

AIAM SESSIFMY IS TO STIFM	
PACK A 520STFM+1 Meg Disk Drive+BASIC+Our FREE Special Pack+Books	£275.00
PACK B 520STFM+1 Meg Disk Drive+BASIC+22 Games+Our FREE Special Pack+Books	2365.00
PACK C 1040STFM+1 Meg+BASIC+Books+VIP+Microsoft Write+Superbase Personal+Ou	FREE
Special Pack	£460.00
PACK D 1040STFM+1 Meg+BASIC+22 Games/Progs+Our FREE Special Pack	00.0342
Increase the speed of your Amiga with our 68010 Processor + full instruction	230.00
Double the speed of your Amiga with the Accelerator Card with the 14.3 MHz 68000 +	
Optional 16 MHz 68881 Co-Processor	2129.00
Increase the speed of your XT Bridgeboard with our V20 Upgrade	£20.00
Add 8087-2 Co-Processor to your XT Bridgeboard/PC	£134.00
Upgrade your Amiga 2000 with our 80286 Card	From.£300

AMIGA PUBLIC DOMAIN DISKS

We have over 600 PD Disks in our Library which include Fish Disks, Amicus Tbags, APDL Quads. Each PD costs £3.00 inclusive or buy 10 and get 3 free. Disk catalogue costs £5.00 (2 disks). Buy a complete Bible (Old and New Testament) for only £8.50 (3 disks).

100% GUARANTEED ERROR FREE

100 / GOARAITI	LLD LIMON I MLL
UNBRANDED	BRANDED
3.5° DSDD£10.00 per box of 10	SONY/3M/VERBATIM
3.5° DSDD£20,00 per qty of 25	3.5° DSDD£14.00 per box of 10
5.25° DSDD£5.50 per box of 10	3.5° DSHD£38.00 per box of 10
5.25° DSDD£6.50 per box of 10	5.25° DSDD£13.00 per box of 10
+ Library Case	5.25° DSDD£13.00 per box of 10
5.25° DSDD£12.00 per gty of 25	
5.25° DSHD£24.00 per box of 10	

We also stock Commodore 64's and PC Compatibles, Pegasus Software/Stationery.

Please ring for details

All prices are inclusive of VAT. Goods are despatched within 24 hours of cleared transaction.

Personal Callers welcome. Please send your cheque/Postal Orders to:

#### QUADSOFT COMPUTERS

Unit 306, 203/213 Mare Street, London E8 3QE Telephone: 01-533 5116/0860 564231

#### **Public Domain Software** for the Amiga

#### from £3 per disk all inclusive

\* Over 500 disks! \* Membership not necessary \* Fast Service

We have one of the largest collections of PD software for the Amiga in the UK. We currently stock:

> O FISH 1-204 O AMICUS 1-26

O SLIPPED DISK 1-40

O FAUG HOTMIX 1-75

O PANORAMA 1-71

O AUGE 1-25

O T-BAG 1-23

All the above are £3 each + 1 FREE when you order 10

2 catalogue disks available at £5 which give details of the above collections

HARDWARE: External Disk Drive £88.95 Amiga A500 £360 All prices are fully inclusive of VAT

\* JOIN THE CLUB! Interested in joining our user club? Write or phone for details ★

SOFTWARE

€67.35

#### Our own special selection £4.00 each

O APDL #6 CLI HELP
Confused by CLI? This one's for you
APDL #7 LANGUAGES

Lisp, Prolog, Logo, Forth APDL #8 AMIGA DISK DOCTOR

APDL #14 BEST ARCADE GAMES
APDL #14 BEST ARCADE GAMES
APDL #15 BEST BOARD GAMES
Backgammon, Othello, Yahtzee etc.
APDL #17 BUSINESS COLLECTION

Editor, Spreadsheet & Database APDL #41 DATABASES

APDL #41 DATABASES
Keep track of your data
APDL #42 ADVENTURES Vol 2
Castle: A graphic adventure & several
text adventures
APDL #43 C COMPILER ASSEMBLER AND
LINKER
APDL #44 WORD PROCESSING
Word Processor & Spellchecker
APDL #45 PUZZLE & STRATEGY GAMES
APDL #48 MAGNIFICENT FORCE II
20 Great Tunes
APDL #52 FRACTAL GENERATORS
APDL #55 FRACTAL GENERATORS
APDL #57 JUNGLE COMMAND
Musical Invasion 3

APDL #57 JUNGLE COMMAND
Musical Invasion 3
APDL #58 CHET SOLACE SHAREWARE
EXTRAVAGANZA. Some of the best
shareware programmes on easy-to-use
menu driven disc
SPECIAL. Startrek (1 MB) Superb PD game
for those with 1 Mb. 3 discs £8.00
Write or phone for a FREE List

THE AMIGA PD LIBRARY

Dept. AMC, 140 Rushdale Road, Sheffield, S8 9QE PD Hotline 0742-588429 (9am-9pm)

#### **AMIGA HARDWARE**

Amiga 500 From £359.99	F
Amiga 500/1084S£614.99	
A1010 Disk Drive£99.99	
A1084S£259.99	18
A501 Ram Exp/Clock £134.99	11
A520 Modulator£24.99	18
A590 20 Mb Hard Drive £374.99 Vortex 40Mb Hard Drive . £544.99	11
VOICEX 4UMD HAID DIIVE . 2.344.33	- 11

CUMANA		
1Mb 3.5* Drive	£89.99	
1Mb 3.5° Drive +PSU .	£116.99	
1Mb 5.25* Drive	£121.99	
1Mb 5.25° Drive + PSU	£133.99	

As	sempro	£43.7
Az	tec C Developer	£132.7
Az	rtec C Professional	£95.6
Be	enchmark Modula 2	£143.2
Be	enchmark C Lib	£75.8
Be	enchmark IFF Lib	£75.8
Be	enchmark Simplifier	£67.3
De	evpac 2	£44.4
GF	A Basic	£48.1
	soft Basic	
K-	Seka	£37.0
La	ttice C V5	£242.2
La	ttice C++	£379.1

Power windows V2.5	£58.9
Project D	£33.6
Quarterback	£50.5
Studio Fonts	£25.2
Superback	£44.3
The Calligrapher	£75.8
Transformer	£26.2
X-Copy	£18.9

Aegis Animagic

Pixmate	£42.00
	£40.40
	£50.50
Professional Dra	w£117.90
Pro Video CG1	£134.75
	£210.55
Sculpt 3D Anima	te £100.45
	RING
	£40.40
The Director	£50.50
The Directors To	olkit £29.45
	RING
	ainRING
	£75.80
	£75.80
Video Effects 3D	£134.75
	aster £58.95
	ler £58.95
	esign £21.00
	£21.00
	£21.00
	£21.00
	n£21.00
	RING
* State sculpt or	

*Interior Design *Microbot Design Zoetrope * State sculpt or videoso	£21.00
Music	
A Drum	£29.6
Aegis Audiomaster	£42.0
Aegis Audiomaster 2	£67.3
Aegis Sonix	£54.7
Deluxe Music	€58.9
Dr T's KCS	£168.4
Dynamic Drums	£50.5
Dynamic Studio	£126.3
Hot 'n' Cool Jazz	€8.4
Instant Music	£21.0
Music X	£216.9
Opus 1	
obser i minimizer	

Pro Midi Plus	£28.30
Pro Midi Studio	£117.90
Rock 'n' Roll	£8.40
Sound Oasis	
Studio Magic	
Synthia	
Ultimate Sound Tracker	£29.65

#### COMMUNICATIONS

A Talk III	£75.80
BBS PC	
Ruby Comm	
Ruby Comm +	RING

EDUCATIONAL		
AB Zoo	£11.00	
Aesops Fables	£21.00	
Animal Kingdom	£33.65	
Chicken Little		
ConSoundTration		
Decimal Dungeon	£33.65	
Descartes		
Designasaurus		
First Shapes		
Fun School 2	£14.80	
Galileo	£48.50	
Goldilocks	£21.00	
H.B. Teaches Typing	£22.20	
Intellitype		
Kid Talk	£26.90	
Little Red Hen	£21.00	
Match-It	£29.45	
Math-A-Magician		
Math-A-Mation	£67.35	
Math Talk	£26.90	
Math Talk Fractions	£26.90	
The Ugly Duckling		
Three Little Pigs	£21 00	

BUNDLES		
ublishers he Works	Choice	£126.30 RING £87.60 £162.75

#### SOFTWARE

WORD PROCESSING		
Excellence	£148.25	
Kind Words 2		
Micro Text	£14.80	
Protext		
Protext Filer	£18.50	
Protext Office	£25.90	
Pro Write V2.0	£75.80	
Text Pro	£42.00	
ranscript	£33.65	
Word Perfect V4.1	£192.80	

DATABASES	
Acquisition V1.3	RING
Data Retrieve	£58.95
Micro Base	£14.80
Microfiche Filer	£67.35
Microfiche 1 Plus Filer .	£134.75
Superbase Personal	£44.45
Superbase Personal 2	
Superbase Prof	

SPREADSHEETS	
Digicalc	£29.6
K-Spread 2	
Logistix	
Maxiplan A500	£96.9
Maxiplan Plus	
Superplan	
	1

	1
DESK TOP PUB	LISHING
City Desk V1.2	£87.55
Pagesetter	£67.35
Pagestream	
Professional Page	
Shakespeare	£125.95
LANGUAGES/ASS./	COMPILERS
Absoft AC Basic	£164.30
Absoft AC Fortran	
APL 68000	
A-Rexx	£37.90

UTILITIES	
Ashas Caligrafonts	£50.50
BAD.	
B.B.C. Emulator	
Butcher 2	
CLImate	£33.65
Cygnus Ed Prof	£75.80
Diskmaster	
Disk 2 Disk	£42.00
Dos 2 Dos	£42.00
Dos 2 Dos Enhancer (WB 1.3) FACC II	£14.15
FACC II	£25.25
Fancy 3D' Fonts	£42.00
Flipside	£25.25
Gizmoz V2.0	
GOMF V3.0	
GOMF Button	
Grabbit	
Interchange	
K-Gadget	
Lions Fonts	£50.50
Mailshot	
Mailshot Plus	
Newsletter Fonts	£25.25

Lin Ain La illiamiden Tricking	
Aegis Animator/Images .	£67.35
Aegis Impact	£58.95
Aegis Impact Aegis L.C.Action!	£54.75
Aegis Modeler 3D	267.33
Aegis Videoscape 3D	£121.00
Aegis Video Titler	£93.00
Animation Rotoscope	RING
Cornic Setter	£42.00
Comic Setter Clip Art	£16.80
Deluxe Art Parts	£8.40
Deluxe Paint II	142.UU
Deluxe Paint III	£67.35
Deluxe Photolab	£58.95
Deluxe Print II	£42.00
Deluxe Productions	£117.90
Deluxe Video	£58.95
Design 3D	£67.35
DigiPaint	£33.65
Express Paint	£58.95
Fantavision	£35.00
Icon Paint	£17.50
Movie setter	£67.35
Page Flipper + F/X	£80.85
Photon Paint	£51.85
Photon Paint 2	£66.70
Photon Paint Exp. Disk	£14.80
Photon Paint Cell Anim .	£80.83

Music	
A Drum	£29.6
Aegis Audiomaster	£42.0
Aegis Audiomaster 2	£67.3
Aegis Sonix	£54.7
Deluxe Music	£58.9
Dr T's KCS	£168.4
Dynamic Drums	£50.5
Dynamic Studio	£126.3
Hot 'n' Cool Jazz	£8.4
Instant Music	£21.0
Music X	£216.9
Opus 1	€84.2

.... £25.25 Photon Vid Trans Cont .... £161.70 Please ring for prices/availability on any hardware/software/peripherals not listed. (Full price list on request)

C.A.D.	
Aegis Draw 2000	£188.95
IntroCAD	
Pro Board	£168.40
Pro Net	
X CAD	



Please make cheques/postal orders payable to SCC MAIL ORDER. All prices are inclusive of V.A.T. All software delivered free (UK only) Hardware/Peripheral Carriage rates on request ALL PRICES CORRECT AT TIME OF GOING TO PRESS All items subject to availability.

S.C.C. MAIL ORDER
29 Crowtree Road, Sunderland SR1 3JU. Telephone: 091 565 5756

CAPTAIN CRUMBLE IS THE MOST INSTANTLY APPEALING CHARACTER TO HIT THE ATARI..." PAGE 6 / ATARI USER

NOW HE'S BACK — IN THE ACTION PACKED
ST SCREEN SHOTS

ARCADE ADVENTURE...

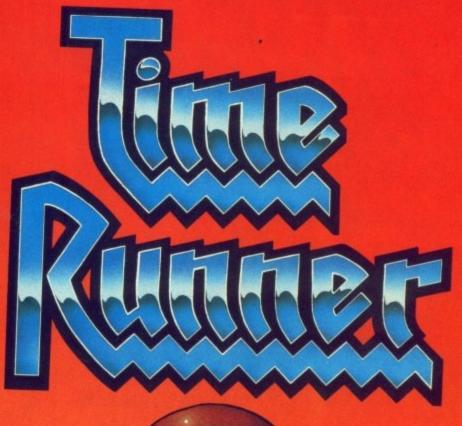














ZOOM THROUGH THE TIME GATES! BLAST YOUR WAY INTO FOUR FANTASTIC WORLDS!

ATARIST/AMIGA £19.99



15 FENNEL STREET, MANCHESTER M4 3DU.

CHARLET SOTALS

Sells for £39.95 . . . but yours

(UK only)

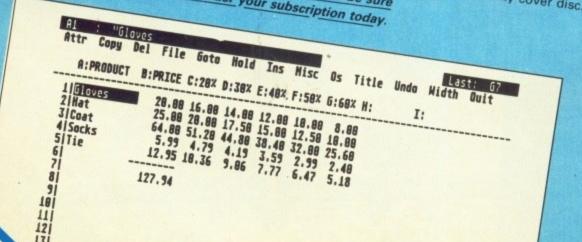
... when you subscribe to Amiga Computing

DG Calc is one of the most powerful and easy to use spreadsheets in its price bracket. It offers all the features you could think of, and many more besides. Specially written to make the best use of the Amiga's features, DG Calc is an invaluable addition to your business utilities.

And now it's even more value for money because we're giving away an exclusive special edition of the program - ABSOLUTELY FREE.

All you have to do to get your hands on a copy is take out a 12 or 24 month subscription to Amiga Computing, and we'll send you one by return.

Plus you'll save £5.45 off the cover price for 12 month subscriptions, or a massive £15.85 for 24 month subscriptions! And don't forget you'll also get the monthly cover disc. But remember, this is a limited summer offer, so to be sure of your free copy of DG Calc order your subscription today.



#### 12 month subscription

Cover price £35.40

Offer price £29.95

SAVE £5.45!

#### 24 month subscription

Cover price £70.80

Offer price £54.95

**SAVE £15.85!** 

#### Some of DG Calc's numerous features:

- 512 rows by 52 columns
- \* Menu or command driven
- \* Adjustable column widths
- \* Text overflow
- \* Instant recalculation
- \* Integrates with other programs
- \* Window feature
- \* User definable formulae
- \* GOTO feature
- Password protection
- \* Cell justification powerful line editor
- \* UNDO feature
- Beginner's tutorial
- Supports keyboard or mouse
- UK only

To place your order, please use the form opposite

Offers subject to availability

All UK prices include postage, packing & VAT

All overseas orders despatched by Airmail



Annual Subscription Including DG Calc (UK only)  12 months	Cover disc Offers (see page 52)  Trained Assassin  1003
UK £29.95 9553 Europe & Eire £34.95 9543 Overseas Airmail £49.95 9545  UK £29.95 9553 9544 9544 9546	Raider £19.95 9850 Raider £14.95 9849 Home Accounts/Day by Day £39.90 9851  Add £2 per program Europe & Eire / £5 Overseas
24 months	Fun School 2
UK £54.95 9555 Europe & Eire £63.95 9559 Overseas Airmail £91.95 9551	Under 6 years £19.95 9842 6 to 8 years £19.95 9843 Over 8 years £19.95 9844 Add £2 Europe & Eire / £5 Overseas
* Orders received by September 15 will commence with October issue	Tank Attack
March 1989-August 1989 bundle £10.95 9855	£19.99 9848
dd £3 Europe & Eire / £12 Overseas	DG Calc (see apposite) £29.95 9831
April 1989 £2.10 9709 April 1989 £2.10 9710 May 1989 £2.10 9711 June 1989 £2.10 9712 July 1989 £2.10 9713 * August 1989 £3.10 9714  dd 50p per issue Europe & Eire / £2 Overseas Includes cover disc	Add £2 Europe & Eire / £5 Overseas  Pioneer Plague  £24.95 9828  Add £2 Europe & Eire / £5 Overseas
combard RAC Rally see page 27) £24.95  £24.95  £24.95	Transparent calculator (see page 80)  AC 7 8 8  MK 4 5 6 X 9  MH 0 • MH 0 • MH
£79.95 9530	Tick here if you are ordering
ncelot	the calculator £7.95 9854  Tick here if you are spending £25 or more on reader offers (excluding subscriptions)

Order at any time of the day or night

Telephone: 051-357 2961

Orders via Fax:

Orders by Prestel: Key'89, then 614568383

Orders via MicroLink: MAG001

Don't forget to give your name, address and credit card number

No. Cheque/Eurocheque payable to Arniga Computing

Ехр.

Valid to 30.9.89

Name.

Signed

Address\_

Post Code

Daytime telephone number in case of queries

# ATHENE COMPUTERS 0705 511439



PC 1 EXPANSION BOX £99 + VAT

#### SAME DAY DESPATCH

AMIGA BB2000 WITH XT BRIDGE BOARD, 20MB HARD DRIVE, 1084S COLOUR MONITOR £1,390 + VAT

# N.S.

NEW PC 30 NOW IN STOCK

PROFESSIONAL

# ALL COMMODORE PRODUCTS UK SPECIFICATION 240 VOLTS

AMIGA A500 1.3 MONITOR 1084S RAM EXPANSION £699 INC

#### **AMIGA HARDWARE**

A500 + TV Mod £369 inc
A500 + Games Pack £389 inc
A500 + Philips 8833 High
Res Colour Monitor £578 inc
A500 + Visions 4200
Colour Monitor £528 inc
A500 +8833 Philips
Colour Monitor £548 inc

### AMIGA EXTERNAL

AF880 31/2 Drive £89 inc FR302C 31/2 Drive £85 inc Cumana Cax 354E £99 inc A1010 31/2 Drive £115 inc No MD C30 31/5 Drive £85 inc

DRIVES

#### AMIGA ACCESSORIES

Mouse Mat £4.95 inc
Amiga Dust Cover £4.95 inc
TV Modulator £21.95 inc
Steel Monitor Standard
Amiga 5205T £15.95 inc
Steel Double Monitor
Stand Amiga ST £25.95 inc

A501-512 K Ram

#### **COMMODORE C64**

C64 Hollywood Pack
C64 Home Entertainment
Pack
1541 C11 51/4 C64 drive
Coeanic 41/4 C64 drive
£149 inc
£199 inc
£145 inc
£145 inc

#### **A2000 HARDWARE**

£899 + VAT A2000 + 1084(S) Monitor £1598 inc + bridge BD + 20Mb Hard disk £1199 inc A2000 + 1084(S) For DTP/CAD Configurations All Systems Formatted Amiga 2000 A 2058 8Mb Mem Expansion card fitted with 2Mb Ram A2084 A/2092 - Autoboot Amiga 20Mb Hard drive Internal (Amiga) Video Card - Flicker Fixer Phone 14 inch High Res Colour Monitor FST A2000, A2620, A2090, A/2092 Video card 21" FST HRCM Phone A2000, A2620, A2090 A/2058 Video Card 14" HRCM Phone For further selection please phone

#### **A2000 ACCESSORIES**

20Mb Hard disk £399 inc
Amiga or Msdos
XT Bridge Board £399 + VAT
AT Bridge Board £675 + VAT
INT Genlock £179 + VAT
8Mb Ram/B with
2Mb Ram £649 + VAT
2nd Drive 31/2 £75 + VAT

#### DRIVES

CPPS A590 20Mb
Hard Disk
Vortex A500 Hard disk
A590 20Mb + 2Mb Ram
Hard Disk
Cumana CSA 354
Cumana CDA 358
Cumana IMB 51/4
External 2nd drives from

£395 inc
£499 + VAT
£499 + VAT
£115 + VAT
£115 + VAT
£85 inc

# COMMODORE PC40 AT's

Include V.G.A. Adaptor, 1Mb Ram 1.2 Mb Drive

PC40 111 Single Drive V.G.A. mono £1149 + VAT PC40 111 Single Drive V.G.A. Colour Monitor £1369 + VAT PC40 111 40Mb Hard disk £1419 + VAT V.G.A. mono PC40 111 40 Mb Hard disk £1579 + VAT V.G.A. Colour monitor PC40 111 40Mb Hard disk & 40Mb £1629 + VAT Tape streamer mono PC40 111 40Mb Hard disk & 40Mb Tape colour monitor £1839 + VAT

#### COMMODORE DESK TOP PCS

All XT's at 3 speeds 4, 77, 8, 10 Mz supplied with AT-E 102 keyboards & Dos

PC 10 111 Single drive £485 + VAT mono monitor Single drive C.G.A. £599 + VAT colour monitor Single drive E.G.A. £799 + VAT colour monitor PC10 111 Dual drive mono monitor Dual drive C.G.A. monitor £659 + VAT Dual drive E.G.A. monitor £789 + VAT PC20 111 20 Mb Hard disk £689 + VAT mono monitor 20Mb Hard disk £839 + VAT C.G.A. monitor 20Mb Hard disk £949 + VAT E.G.A. monitor

#### LASER PRINTERS

 Citizen Overture
 £1299 inc

 Hp Laserjet 2
 £2099 inc

 Star Lazer 1Mb mem
 £1695 inc

 Epson CP3500
 CALL

#### STAR PRINTERS

Star LC10 Mono £189 inc Star LC10 Colour £249 inc £349 inc Star LC24-10 £179 inc Star I C10 CBM 64 Star LC10 Colour CBM 64 £199 inc Star ND15 Wide Carriage £343 inc £357 inc Star NR10 Star NR15-Wide Carriage £412.55 inc Star NB24-10 £453.87 inc Star NB24-15 £550.27 inc wide Carriage

#### COMPUTER SUPPLIES

31/2 Bulk Sony
50 Disks
only £44 inc
31/5" Branded Sony
10 Disks
only £14 inc

Call for Qty discounts. Most Brands Supplied. Storage Boxes, Mouse Mats, Cleaning Kits etc.

> Amiga PD Lib over 500 titles £2.50 per disc

#### A500/A2000 MONITORS

Philips CM8833 High Res 1084(s) Stereo High Res Visions 4200

£229 inc £239 inc £189 inc

£129 inc

FAX YOUR ORDER ON 0705 511646

### PHONE 0705 511439 24hr delivery Athene Computers

Dept. AMC
The Media Centre
16 Stoke Rd. Gosport
Hants. PO12 1JB

#### **Delivery Charges**

Next day £10 inc 4 day £5 inc Computer Supplies Free by Post





# AmigaTEX

AmigaTEX provides a powerful alternative in document preparation. It enables you to typeset complex or long documents, especially those of a technical nature such as user manuals or journal papers. It gives you true typeset quality with kerning, ligatures, full floating accents, mathematical and technical symbols and the ability to produce tables and special formats. AmigaTEX will accept input from any text editor or word processor and with its built-in screen previewer, a document formatter of mainframe power becomes available. Also included with AmigaTEX are LaTEX - a document formatter with dozens of preformed styles, SliTEX - a slide generating macro, and BibTEX - a bibliography database program. AmigaTEX is fully file compatible with other versions of TEX.

Printer drivers are available for most printer types and the complete set of Computer Modern Fonts is included. A companion program METAFONT is available for those who wish to create new fonts or modify existing ones.

AmigaTEX is £125 and printer driver sets (laser series, Epson FX series, NEC P6 and Epson LQ series, HP DeskJet) are priced at £75 each. METAFONT is £50.

All prices include VAT and carriage.

Access and Visa accepted.

For further details and free demo disk write or call:

#### THE TEXT FORMATTING COMPANY

14 OSBALDESTON ROAD, LONDON N16 7DP TEL: 01-806 1944





#### TEL: 0983 79 496

VISA

BUSINESS	
A Talk Plus	59.80
A Talk Plus Accounts Payable	42 78
Accounts Receivable	42.78
Acquisition V1.3	150 85
BBS DC	90.00
BBS PC City Desk V2.0	110.00
Data Datrimo Prof	160.77
DD Man	100.77
Data Retrieve Prof DB Man Form Master (Horses) .	109.94
Constal Ladara (Horses) .	40.02
General Ledger	42.78
Home Accounts	23.92
Inventory Control	42.78
Invoicing & Sales Ledger	42.78
K Comm 2	
K Data	35.88
Kindwords 2	36.80
Kindwords 2 Mailshot Plus	36.80
Microbase	18.86
Microfiche Filer	58.88
Microfiche Filer Plus	
Microtext	18.86
Page Setter	. 56.81
Pagestream	119.93
Professional Page	174 BD
Protext	. 66.93
Protext Filer	. 23.92
Protext Filer Publishers Choice	. 69.92
Burby Maur/Tares	71 00
Small Bus, Accounts Xtra	89.93
Small Business Accounts	64.63
Superbase Personal 2 Superbase Professional	66.93
Superbase Professional	169.97
Superbase Personal	41.86
The Works	72 45
The Works Platinum	159.85
Transcript	32.89
Wordperfect	169 97
Transcript	69.69
GAMES	
Balance of Power	20.93
Powerdrome	17.94
Silkworm	14.95
Silkworm	17.94
Zork Zero	17.04
ZDIR 2610	. 11.04

HARDWARE 3.5" Second Drive with	UTILITIES (continued) Dos 2 Dos	
3.5° Second Drive with	Dos 2 Dos	30.36
Switch74.98	Enhancer 1.3	14.72
A500 Computer with TV	Family Tree	39.79
Modulator 369.84	Forth	
A590 20Mb Hard Disk	Gizmos Productivity Set	
A590 20Mb Hard Disk Drive	Gomf 3	
UTILITIES	Gomf, The Button	. 51.98
Amigados Express 24.84	Instant Music	
Amigados Toolbox 39.79	Lattice C 5	
Amikit	Maxidesk	
Animagic 59.80	Modula 2 Standard	
Arexx	Movie Setter	
Aztec C Developer 149.96	Pascal	
Aztec C Professional 111.32	Pixmate	
B.A.D. Disk Optimiser 33.58	Professional Draw	
Basic 62.33	Project D	
C Light	Protext Office	29.90
Cambridge Lisp 104.88	Quarterback	
Comic Setter 39.79	Sculp 4D Animate Junior	
Cygnus Ed 74.98	Superback	
Deluxe Music Construction	The Director	41.86
Set	True Basic	.53.82
Deluxe Photolab 49.91	Turbo Silver 3D	
Deluxe Paint III 60.95	Video Titler	80.50
Deluxe Video 50.37	Word Perfect Library	88.09
Devpac 2 41.86	X Copy	
Disk Master	Zoetrope	

#### **FILE RECOVERY SERVICE NOW AVAILABLE**

DATABASE ENTRIES FOR 600 GAMES, 340 UTILITIES & 270 HARDWARE RECORDS

RICHARD HOWE & ANGELA HAMMETT APPLIED RESEARCH KERNEL Corve Farmhouse, Chale Green, Ventnor, PO38 2LA, U.K.

POSTAGE: UK Free, Europe £2, World £4, Swiftair + £2
COMPANY: Amiga/QL Specialists, established 3 years
V.A.T.:All prices include U.K. V.A.T. at 15%
CHEQUES: London Sterling payable to A.R.K.
EXPORT: Remove U.K. V.A.T. (=Price/1.15)
PRICES: Are subject to change

Are you new to the Amiga, finding it difficult to harness the power of this amazing computer ?, then what you need is help from the largest group of Amiga enthusiasts in the world.......



#### Members receive:-

- \* Excellent discounts on software
- ★ Technical support and on line help
- ☆ Superb hardware reductions
- ★ A bi-monthly newsletter of over 60 pages!
- Access to a PD library of over 300 disks
- ⇒ Discounts on books



# AMIGA



DON'T HESITATE - JOIN NOW and start to appreciate what Amiga computing is all about. For further details write, enclosing a stamped addressed envelope to:

The U.K. Amiga User Group, 66, London Road, Leicester. LE2 0QD.

> Or Telephone : Leicester (0533) 550993



10 Petersfield Avenue, Slough, Berkshire SL2 5DN Tel: 0753 35557 Fax: 0753 511122

Conditions of sale

All prices exclude VAT and delivery charges

FROE all prices subject to

\* E&OE all prices subject to change without notice

 All collections made by prior arrangement from our warehouse
 Please add £1+VAT for consum-

\* Please add £1+VAT for consumables and £8+VAT for all other items for next day delivery

161. 0730 03337 Tax. 07	33 311122
AMIGA HARDWARE	
A500 Complete	212.00
ASOD TV Modulator	312.00
A500+TV Modulator A500+£200 worth games	324.00
A500+£200 worth games	
A500+1084S H/Res Col.	520.00
A500+Philips Med. Col	489.00
AMIGA ACCESSORIES	
A501-512K Ram	112.00
TV Modulator	22.00
Mounta Mad	22.00
Mouse Mat	4.00
DATAPLEX DRIVES	
1MB 3.5° External Drive	68.00
1Mb 3.5' Internal Drive	63.00
2Mb 5.20" Floppy Drive	106.00
AMIGA HARD DRIVES	
20Mb Drive A500/1000	220.00
40Mb Drive A500/1000	469.00
COMP Date ACCOMOCO	458.00
60Mb Drive A500/1000	910.00
20Mb Drive A2000	470.00
30Mb Drive A2000	779.00
30Mb Drive A2000 Please ring for other capacity drives	La constitución de la constitución
PHILIPS MONITORS	
CM8033 14* RGB/CVBS Mon	189 00
BM7723 14* Amber Monitor	89.00
CM8852 Hi Res Col Mon	240.00
PRINTERS	249.00
PHINIERS	
Amstrad LQ3500 DI	244.00
Amstrad DMP4000	227.00
Amstrad L05000 DI	329.00
Brother HR20 Daisywheel	318.00
Brother HR40 Daisywheel	688 00
Quendata DWP1120 16cps	169 00
Canon P.11088 Inkiet Col	420.00
Dot Matrix Range Citizen 120D	
Citizen 120D	110.00
Citizen 180E	127.00
New 24pin Swift 24	255.00
Colour unarrada for Cuill	255.00
Colour upgrade for Swift	P.O.A.
Citizen MSP 15E	188.00
Citizen MSP 40	228.00
Citizen MSP 45	252.00
Citizen MSP 50	202.00
Citizen MSP 55 Citizen Premier 35	322.00
Citizen Premier 35	364.00
Citizen HQP 40 (last few)	205.00
Citizen HOP 45 (last few)	205.00
Citizen HQP 45 (last few)	
Engal 1 V900	warranty
Epson LX800	153.00

	items for next day delivery	ner
Epson FX850		0
Epson FX1050		0
Epson EX800		0
Epson EX1000		Ŏ.
Epson LQ500	249.0	Õ
Epson LQ850	404.0	ŏ
Epson LQ1050	542.0	ŏ
Hewlett Packard	542.0	
	265.0	0
	343.0	
Quietiet.	412.0	ŏ
Deskiet	443.0	ő
Deskiet 4	535.0	ň
Paintiet	665.0	0
Runned Writer	965.0	0
All Hewlett Packari	865.0 d Printers come with 12	
months onsite war	ranty	
Star I C10 Mono		0
Star I C10 Colour	195.0	0
Star LC10 COIDUIT	195.0	0
Saikasha CD190 0	245.0	0
Seikosha SP100 9	pin 80 col 100cps F/T 105.0 9pin 80 col 120cps F/T 119.0 80 col, 24 pin 224.0	
Seikosha St 1200	9pin 80 coi 120cps F/1 119.0	0
NEC DOOGO	80 coi, 24 pin 224.0	9
NEC PS65XL		9
NEC P6+80 Charac	ter	0
NEC P7+136 Chara	octer 534.0	0
Colour Upgrade Ki	t	)
Panasonic KXP108	128 0	n.
Panasonic KXP112	249.0	)
Sheetfeeder	89.00	0
Panasonic KAP118	SU 165 U	0
Panasonic KXP159	253.0	0
Panasonic KXP159	344.0	J
Panasonic KXP154	10 428.0	)
NEW Mannesmann	Tally Launch Offer	
MT81 (Dot Matrix)	110.00	)
Sheetleeder	62.00	0
Serial I/F		0
NEW Colour Printe	r from Olivetti	
The visible benefits	(dot matrix)	
DM105S	189.00	0
NEW Mannesmann	Tally Inkjet (black) The MT90	
at only	375.00	0
Optional sheet feed	375.00 der 99.00	)
RIBBONS		
	stock, please call for prices.	
Professional repair	ire carried out	
Another branch of		
renomer branch of	remmy shortry	

1 Bridge Street Galashiels TD1 1SW Tel: 0896 57004 (24 hours)

A50 A50 A50 Re

A5 Co A5 Co

# WARLDWIDE SOFTWARE

106A Chilwell Road Beeston Nottingham NG9 1ES

AMIGA LEISURE	AMIGA LEISURE	SURE AMIGA LEISURE	
3D Pool	F.O.F.T21.95	Power Drome 17.95	
APB	Forgotten Worlds 14.95	Prospector	
African Raiders14.95	Fright Night	R Type	
Airborne Ranger 16.95	Fun School 2 (6-8)14.95	Red Heat17.95	
Amiga Gold Hits17.95	Fun School 2 (over 8) 14.95	Rick Dangerous16.95	
Archipelagos16.95	Fun School 2 (under 6) 14.95	Robocop	
Astaroth	Gold Rush 17.95	Rocket Ranger 17.95	
Balance of Power 1990 16.95	Grand Monster Slam 14.95	Run the Gauntlet16.95	
Barbarian 216.95	Grand Prix Circuit	Running Man 16.95	
Bards Tale 2 17.95	Gunship 16.95	RVF16.95	
Batman	Hawkeye 14.95	Savage 16.95	
Battlehawks 1942 17.95	High Steel	Shoot 'em up Const. Set 16.95	
Battletech	Hollywood Poker Pro 18.75	Silkworm	
Beam	It Came From The Desert 21.95	Sleeping Gods Lie16.95	
Beast	Jack Nicklaus Golf 17.95	Space Quest 2 17.95	
Bio Challenge 16.95	Jaws	Speedball16.95	
Blood Money 16.95	Kennedy Approach 16.95	Spherical14.95	
Bloodwyche 17.95	Kenny Dalglish Soccer Mngr 14.95	Star Glider U	
Breach	Kick Off	Steigar14.95	
Bridge Player 2000 14.95	Kingdom of England 16.95	Steve Davis Snooker 14.95	

Fast delivery on all stock items by 1st Class Mail in UK. Special overseas service by Air Mail worldwide. Credit Card orders accepted by Phone or Mail.

Credit Card Order Telephone Lines: North, Scotland, N.Ireland, Overseas – 0896 57004 (24 hours). South, Midlands, Wales – 0602 252113 (24 hours)

AMIGA LEISURE	AMIGA LEISURE	SURE AMIGA LEISURE	
Capone21.95	Krystal21.9		
Carrier Command 16.95	Kult	5 Super Scramble 14.95	
Castle Warrior 16.95	Last Ninja 2	5 Sword of Sodan 17.95	
Chariots of Wrath 16.95	Legend14.9	5 Talespin	
Colosus Chess X 16.95	Leisuresuit Larry 221.9	5 Tank Attack	
Datastorm	Leisuresuit Larry 14.5	5 Targhan	
De Luxe Scrabble	Licence to Kill	5 Test Drive 2-California Chall 9.99	
Déjà Vu 2	Lombard RAC Rally16.9		
Demons Winter 17.95	Lords of The Rising Sun 21.5	5 Thunderbirds	
Dominator 14.95	Manhunter 21.5		
Double Dragon14.95	Microprose Soccer	5 Times of Lore	
Dragon Ninja 17.95	Milenium 2.2	5 Timescanner	
Dungeon Master (1 meg) 16.95	Murder in Venice 17.5		
Dungeon Master Editor 7.99	New Zealand Story 17.5	5 TV Sport Football21.95	
Elito 16.95	Operation Wolf16.5	_ UMS10.93	
Emmanuelle	Outrun 7.2		
F16 Combat Pilot	Paladin 21.5		
F16 Falcon	Personal Nightmare	5 Weird Dreams 16.95	
F16 Falcon Mission Disk 14.95	Phobia	g Wicked17.95	
Fire Brigade (1 meg) 21.95	Police Quest		
Flight Simulator 2	Populous	A10018	

Please make cheques and postal orders payable to WORLDWIDE SOFTWARE. All prices include postage and packing in UK. Credit card orders accepted by phone or mail. Europe other than UK shipping costs are £1.50 per disk for normal airmail, £2.50 per disk for express airmail. Outside Europe shipping costs are £2.00 per disk for normal airmail, £3.00 per disk for express airmail.

Advertised prices are for Mail & Telephone Orders



A world of information at your fingertips



The Microtext Adaptor turns your Amiga into an advanced Teletext TV giving you fast access to any of the free pages from Ceefax or Oracle. Hundreds of pages constantly updated to give you the very latest information, at the touch of a button.

The mouse may by used to select any page then print it or save it to disc. Saves may be compact or IFF, it can read out the news and is easily programmed to do all these things automatically. With true 'FastText', the system knows what pages are likely to be selected next and gets them in advance making them available instantly. Many more facilities are also provided. The Adaptor connects to the Parallel port, your printer is then reconnected to a socket on the Adaptor and when the computer is not in use you can watch TV on the monitor!

"A highly recommended purchase" Amiga Computing – Feb '89

At only £124.80 + VAT for an advanced Teletext TV, its excellent value for money, VHF/UHF International version: £169.50

#### **■ MICROTEXT**

Dept AG, 7 Birdlip Close, Horndean, Hants PO8 9PW Telephone: (0705) 595694

# ADVERTISERS' INDEX

Amiga PD Library92
Amigatex97
Amiga Users Group97
Amtech Computing99
Applied Research Kernel97
Ashcom67
Athene Consultants77
Byteback91
Castle Software58
Cestrian Software81
Club 6800042,43
Computer Shopper Show6
Dataplex97
Datel Electronics10,11
Desktop Publishing Show63
Digicom67
Digipro69
Evesham Micros83
First Micro23
Gordon Harwood Computers86,87
Ladbroke Computing54
Mandarin Software27
M D Office Supplies68
Memory Expansion Systems60
MicroLink21
Microtext98
Midland Microsoft73
Mirrorsoft53
MJC Supplies40
Oasis Services57
Palace Software100
Postronix2,3
Quadsoft92
Seventeen Bit Centre76
Shield Computer Services98
Silica Shop31
S K Marketing33
Softsellers41
Special Reserve84
Sublogic88
Sunderland Computer Centre92
Trilogic81
Worldwide Software98

#### ST & AMIGA REPAIR CENTRE

#### A500's ★ £55.00 FIXED PRICE REPAIR ★ ST's

Includes – courier delivery, parts, labour, full service and V.A.T., 90 day warranty, 5 day turnround (subject to parts availability) Collection can be arranged, £11.50 extra.

All our engineers are fully experienced in 16 bit technology

Repairs undertaken on Amiga 2000, Atari Mega ST, Printers, Monitors, V.D.U.'s etc. and most Business & Home Computers.

Low cost maintenance agreements available . Educational & dealer discounts given.

SHIELD COMPUTER SERVICES LTD 50 Flixton Road, Urmston, Manchester M31 3AB Tel: 061-747 3185 Fax: 061-747 0515



# **5** (0703) 731974

# **Quality Amiga Software**

### 2 Cowdray Close, Lordswood, Southampton, SO1 8EB

#### The Works!

popular Word Processor. Database and Spreadsheet at your fingertips for just:

#### £74.99 Inc VAT

#### Word Processing

Scribble! Word Processor with spellcheck and Mailmerge.

#### Database

.....92 .....97

.....81 42,43

10,11

.....69

.....83

86,87

....54

....27 ....68

....60

....21

....98

....73

....40

....57

..100

...2,3

....92

....76

....98

....31

...33

...84

...88

...92 ...81

...98

RE

and

ogy

Organize! Database with form editing facilities.

#### Spreadsheets

Analyze! Spreadsheet including graphs and macros.

# **Publishers** Choice

#### DTP Pack including:

Pagesetter 1.2 KindWords 1.2 Artists' Choice Artpack 100,000 Word Dictionary Disk KindWords Superfonts Headline Fonts Laserscript

> Only £88.99 Inc VAT!

# **Public** Domain

#### **PRICES**

1 - 5 disks £3.00 each 6 - 10 disks £2.70 each 11 + disks £2.50 each

#### PD Starter Disks

Try our compilation starter disks especially prepared for those who are new to PD.

Graphics 1: Collection of IFF and HAM mode images with viewing programmes.

Games 1: A selection of PD entertainment software.

Utilities 1: Create the environment that suits you with window shadows, customized pointers and much more.

#### PD Ranges Available:

Fred Fish Disks 1 - 188 Amicus Disks 1 - 28 T-Bag Disks 1 - 25

#### Free Catalogue

Send now for this valuable directory of PD software.

## X-CAD Designer

The new, powerful design and technical drawing package for professional and home use. Many drawing features plus:

> Fast refreshes Macro commands

Value £89.99 inc VAT

Great

#### COLOUR PRINTING SERVICE:-

Try our colour printing service - any IFF of HAM file printed on our HP PaintJet Colour Printer using the highest quality paper. Prices: each file £1.00 for first print; 50p for each additional copy. Simply enclose disk and instructions.

#### HOW TO ORDER

Simply complete the order form on the right and send it with your cheque payable to AMTECH COMPUTING to:

2 Cowdray Close, Lordswood, Southampton, Hants SO1 8EB. If you prefer to book your order by

phone then call our 24 hour ansaphone service; simply leave your name and phone number and we will call you back

Please note that all orders are subject to the avilability of stock, and prices may be subject to change without prior notice. All prices include VAT.

Name	Specify Item/ Quantity	Price
	The Works!	3
Address	Publishers' Choice	£
	PD - Graphics 1	£
	PD - Utilities 1	£
	PD - Games 1	£
Post Code	X-CAD Designer	£
Phone	IFF or HAM prints	£
		£3
Computer		£
RAM	P&P (fixed charge)	£ 1.00
Tick for PD Catalogue	77 - 4 - 1	0